Post Redesignation Conformity Analysis Report and Conformity Determination For The Greensboro Urban Area 2025 Long Range Transportation Plan

June, 1999

Prepared by:
The North Carolina Department of Transportation
Statewide Planning Branch

In Cooperation with:
The Greensboro Urban Area Metropolitan Planning Organization
and

The North Carolina Department of Environment and Natural Resources
Division of Air Quality

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Greensboro Urban Area Post Redesignation Conformity Analysis Report

Executive Summary

The purpose of this report is to comply with the provisions of the Clean Air Act Amendments of 1990 and the Intermodal Surface Transportation Efficiency Act of 1991(ISTEA). It demonstrates that the fiscally constrained long-range transportation plan of the Greensboro Urban Area Metropolitan Planning Organization eliminates or reduces violations of the national ambient air quality standards (NAAQS) in Guilford County. The plan accomplishes the intent of the North Carolina State Implementation Plan (SIP). This conformity determination is based on a regional emissions analysis that uses the transportation network approved by the Greensboro Urban Area for the 2025 Transportation Plan and the emissions factors developed by the North Carolina Department of Environment and Natural Resources (DENR). Based on this analysis, the Greensboro Urban Area Transportation plan conforms to the purpose of the North Carolina SIP.

Guilford County was originally declared non-attainment for ozone (O_3) on January 6, 1992. At that time Guilford County was classified as moderate nonattainment for ozone. On November 8, 1993, Guilford County was redesignated to maintenance for ozone. The conformity determination is based on the Greensboro Urban Area long range transportation plan. The transportation plan is analyzed for 2004, 2014, 2020 and 2025. Each analysis year includes expected population and employment data and roadway and transit projects that should be open. The plan is fiscally-constrained and funding sources are identified.

Table 1: Summary of Status of Conformity Requirements

Criteria	Plan Meets	Plan Does Not Meet
Consistent with Emissions Budget(s)	✔	
TCM Implementation[1]	NA	
Interagency Consultation	✔	
Latest Emissions Model	✔	
Latest Planning Assumptions	✔	

DENR prepared base and future emission rates for the vehicle fleet using Mobile 5A. These rates were applied to normalized VMT from the Greensboro Urban Area travel demand model. VMT normalization was necessary to match 1994 Greensboro Urban Area VMT with 1994 VMT estimates used for SIP preparation.

[1] The NC SIP includes no TCMs related to this MPO.

Table 2 in this section is a summary of the emissions budget comparison.

Table 2: Emissions Comparison Summary for Greensboro and High Point Transportation Networks

Emissions Comparison (kg/day)[5]				
	NO_x		VOC	
Year	SIP Emissions	Long Range Plan	SIP Emissions	Long Range Plan
1994	39,715	23,468	23,671	16,570
1999[6]	39,920	20,434	23,336	14,672
2002[3]	39,394	18,614	23,481	13,533
2004	39,798	17,400	23,844	12,774
2014	39,798	18,698	23,844	15,245
2020	39,798	20,321	23,844	16,265
2025	39,798	22,043	23,844	17,595

[5] To obtain tons per day divide kilograms per day by 908.
[6] The conformity estimates for 1999 and 2002 were developed by interpolating between 1994 and 2004.

Cross Reference Index For the GUA Metropolitan Planning Organization 2025 Long Range Transportation Plan

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Conformity Determination and Analysis for Greensboro Urban Area 1998 Long Range Transportation Plan

1. Introduction

The purpose of this report is to comply with the provisions of the Clean Air Act Amendments of 1990 (CAAA) and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). It demonstrates that the fiscally-constrained long range transportation plan for the Greensboro Urban Area Metropolitan Planning Organization eliminates or reduces violations of the national ambient air quality standards (NAAQS) in Guilford County and accomplishes the intent of the North Carolina State Implementation Plan (SIP). This conformity determination is based on a regional emissions analysis that uses the transportation network approved by the Greensboro Urban Area for the 2025 Transportation Plan and the emissions factors developed by the North Carolina Department of Environment and Natural Resources (DENR). All Federally funded projects in the areas designated by the United States Environmental Protection Agency (USEPA) as air quality non-attainment or maintenance areas must come from a conforming long range transportation plan and transportation improvement program (TIP). In addition, the United States Department of Transportation (USDOT), specifically, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), must make a conformity determination on the MPO Plan and the TIP in all non-attainment and maintenance areas.

In order to assist the Greensboro Urban Area Metropolitan Planning Organization in making a conformity determination on the adopted 2025 fiscally constrained long range transportation plan, the Statewide Planning Branch of the North Carolina Department of Transportation (NCDOT) performed a systems level conformity analysis of the 2025 transportation plan. This analysis is consistent with the third set of amendments to 40 CFR Parts 51 and 93, *Transportation Conformity Rule Amendments: Flexibility and Streamlining; Final Rule*, effective on September 15, 1997. **Based on the regional emissions budget test documented in this report and compliance with other requirements for conformity the Greensboro Urban Area 2025 Transportation Plan conforms to the purpose of the North Carolina SIP.** This report documents the regional emissions budget test, interagency consultation process, public involvement process, and analysis methodology used to demonstrate transportation conformity.

40 CFR Part 93 requires that a conforming transportation plan satisfy five conditions:

⇒ The transportation plan must be consistent with the motor vehicle emissions budget(s) in an area where the applicable implementation plan submissions contains a budget (40 CFR Part 93.118),

⇒ The transportation plan, TIP or FHWA/FTA project not from a conforming plan must provide for the timely implementation of TCMs from the applicable implementation plan (40 CFR Part 93.113b),

⇒ The MPO must make the conformity determination according to the consultation procedures of 40 CFR Part 93.105I and the implementation plan revision required by 40 CFR Part 93.390 (40 CFR Part 416),

⇒ The conformity determination must be based on the latest emissions estimation model available (40 CFR Part 93.111),

⇒ The conformity determination must be based on the latest planning assumptions (40 CFR Part 93.110).

The Greensboro Urban Area transportation meets each of these conditions as summarized in Table 1. Each condition is discussed in greater detail in the following sections of the report.

2. Air Quality Planning

Guilford County was originally declared non-attainment for ozone on January 6, 1992. Subsequently Guilford County was redesignated to maintenance for ozone on November 8, 1993. The redesignation was based on monitoring data from 1989 through 1992 and a demonstration of maintenance of the standard until 2004. This report includes the USEPA direct final rule for ozone in Appendix A.

2.1 Emissions Budgets

The North Carolina Department of Environment and Natural Resources prepared emissions budgets at the county level for their maintenance demonstration for the Triad. This budget, as well as the Federal Register notice of redesignation, is included in Appendix A.

Table 3: Daily Volatile Organic Compounds Budget

Year	Davidson		Forsyth		Guilford		Total	
	TPD	KG/D	TPD	KG/D	TPD	KG/D	TPD	KG/D
1999	8.21	7454.68	18.26	16580.08	23.98	21773.84	50.45	45808.60
2002	8.06	7318.48	18.33	16643.64	24.17	21946.36	50.57	45917.56
2004	8.07	7327.56	18.59	16879.72	24.57	22309.56	51.23	46516.84

Table 4: Daily NO_X Budget

Year	Davidson		Forsyth		Guilford		Total	
	TPD	KG/D	TPD	KG/D	TPD	KG/D	TPD	KG/D
1999	12.83	11649.64	25.22	22899.76	41.27	37473.00	79.32	72022.56
2002	12.31	11177.48	24.99	22690.92	40.80	37046.40	78.10	70914.80
2004	12.24	11113.92	25.29	22963.32	41.26	37464.08	78.79	71541.32

The analysis documented in this report applies to the Greensboro and High Point Metropolitan Planning areas. The emissions budgets used in this analysis are for Guilford County North Carolina and that portion of Davidson County North Carolina within the High Point Metropolitan Planning Organization. Appendix A includes a letter from NCDENR further subdividing the emissions budget for Davidson County. The emissions budgets used in the comparison are the sum of the Guilford County Emissions budget and twenty-one percent of the Davidson County Emissions budget. Twenty-one percent of the population of Davidson County lives within the domain of the Triad regional travel demand model.

Table 5: VOC Emissions Budgets Used for Conformity Comparison

Year	Davidson County (TPD)	Factored Davidson County (TPD)	Guilford County (TPD)	Total (TPD)	Total (KG/D)
1999	8.21	1.72	23.98	25.70	23336
2002	8.06	1.69	24.17	25.86	23481
2004	8.07	1.69	24.57	26.26	23844

Table 6: NO_X Emissions Used for Conformity Comparison

Year	Davidson County (TPD)	Factored Davidson County (TPD)	Guilford County (TPD)	Total (TPD)	Total (KG/D)
1999	12.83	2.69	41.27	43.96	39920
2002	12.31	2.59	40.80	43.39	39394
2004	12.24	2.57	41.26	43.83	39798

3. Long Range Transportation Plan

The Greensboro Urban area Long Range Transportation Plan has been updated according to the provisions set forth in the Statewide Planning; Metropolitan Planning Regulations per *23 CFR Part 450, Subpart C.* Specifically the development of the Long Range Transportation Plan update meets the requirements of *23 CFR Part 450.322* and *23 CFR*

Part 450.322. The Long Range Transportation Plan has a planning horizon of 2025 and is consistent with current and forecasted transportation and land use conditions and trends for the year 2025. The Transportation Advisory Committee of the Greensboro Urban Area Metropolitan Planning Organization approved dated August 5, 1998 adopting the Greensboro Urban Area 2025 Long Range Transportation Plan and resolved that the Plan conforms to the purpose of the North Carolina State Implementation Plan in accordance with the Clean Air Act as amended.

3.1 Consultation

This report was reviewed by NCDENR as specified in the North Carolina Administrative Code (NCAC Title 15A Subchapter 2D Sections .1501 - .1503 inclusive). NCDENR submitted comments on the draft version of the conformity report. These comments were incorporated into the final report. The NCDENR comments and any agency response to them are included in Appendix G.

3.2 Financial Constraint

The Greensboro Urban Area Long Range Transportation Plan is fiscally constrained to the year 2025. The estimates of available funds are based on historic funding availability and include federal, state, and local funding sources. The transportation networks assumed in each analysis year are balanced with available funds. These transportation networks are described in greater detail in Appendix D.

3.3 Latest Planning Assumptions

The 2025 Greensboro Urban Area transportation plan was developed with the latest planning assumptions as discussed in 40 CFR Part 93.110. Base year (1994) population and employment are based on a "windshield" survey of the planning area. Future year (2004, 2014, 2020, and 2025) employment and population are based on the Existing Trends Land Use Scenario approved by the Greensboro Urban Area Metropolitan Planning Organization.

The Greensboro Urban Area travel demand model is a four-step travel demand model. This model includes trip generation, trip distribution, mode choice, and trip assignment. The trip generation and trip distribution models were calibrated using the TRIAD origin destination survey conducted in 1994. The network assignment and transit assignment were validated using traffic counts and transit ridership counts for 1994.

There are no court orders or special agreements that apply to conformity in the Greensboro Urban Area (40 CFR Part 93.109).

3.4 Future Year Roadway Networks

The future year roadway networks used in the conformity analysis were developed by extrapolating from the current (1998 - 2004) State Transportation Improvement Program and the existing Greensboro Urban Area Long Range Transportation Plan. Local staff

reviewed the made estimates of anticipated funding and used per mile estimates for project costs to determine the likely street networks for the urban area in each analysis year.

3.5 Future Transit Networks

The base transit network (1994) was modeled assuming existing 1994 transit routes and ridership. Analysis for the future year (2025) concludes total transit ridership to be 1.2% of the vehicle trips (converted to person trips). The 2025 transit analysis assumes continuation of exisiting transit routes without the expansion of regional routes. The major hubs in the triad region are proposed to be:

1- Winston-Salem Transit Center
2- Greensboro Multi-Modal Center
3- High Point Transit Center
4- Triad Airport

The future year ridership is based on the Trend Land-Use projections not to exceed 1.2% of total vehicle trips (converted to person trip). Total estimated daily ridership for the triad region is 69,000 riders for the design year 2025. It is assumed that the continuation of historical growth patterns will continue to support existing routes but will not be conducive to expansion to regional service.

As required in 40 CFR 93.106, all transit projects in the future (2004, 2014, 2020, and 2025) are fiscally constrained.

3.6 Trip Generation

Trip generation is performed using the NCDOT's Internal Data Summary (IDS) program. IDS estimates trip productions using five housing classifications per analysis zone and one trip rate per housing classification. The household classifications are determined during a "windshield" survey of the planning area. The windshield survey includes a 100 percent look at the dwelling units within the planning area. Trip attractions are estimated based on the number and type of employees in an analysis zone and the number of commercial vehicles garaged in the analysis zone.

The Triad Regional Travel Demand Model uses seven trip purposes: rural home-based work, urban home-based work, rural other home-based, urban other home-based, non home-based, external-internal, truck, and external-external or through trips.

3.7 Trip Distribution

The Triad Regional Travel Model uses a standard gravity model to distribute trips. The model builds zone to zone trip tables (by purpose) using a weighted sum of travel time and distance. For assignment purposes the individual trip tables are aggregated into a single trip table for each analysis year (1994, 2004, 2014, 2020, and 2025).

3.8 Mode Choice and Transit Assignment

The transit model is an essential part of long range transportation planning for the Greensboro 2025 Transportation Plan. The transit model was developed based on existing transit routes and ridership. The TAZ's adjacent to the transit routes were identified and analyzed with regards to lower income housing and employment opportunities. The base year (1994) transit model was then tested for accuracy, loaded and calibrated to within 100 person-trips of the actual route ridership.

Future year transit routes are described briefly in Section 3.5 above. The future year transit system includes high speed, high capacity transit service mostly on exclusive right-of-way, with some in-traffic operation in the Central Business Districts. The future year transit network will include additional bus service to support the high speed, high capacity transit system and to operate in the area between the high demand corridors. These buses operate on the streets with travel time dependent on the network speeds from the model.

3.9 Highway Assignment and Vehicle Miles Traveled

The Triad Regional Travel Model uses an all-or-nothing assignment method. This method assigns vehicle trips based on minimum paths. After the vehicle trips are assigned, the fiscally constrained networks are used as input into Truespeed. Truespeed is a post processor that calculates link travel speeds based on assigned traffic volume, number of through lanes, and number of signals per mile. Truespeed is based on Chapters 3 and 11 of *The Highway Capacity Manual*. The vehicle miles traveled (VMT) and travel speeds used for this conformity analysis were calculated and aggregated by functional classification during the Truespeed run.

4. Regional Emissions Budget Test

In areas with an USEPA approved attainment demonstration of maintenance plan, an emissions budget comparison satisfies the emissions test requirement of 40 CFR Part 93.118. For pollutants for which an emissions budget has been approved, the estimated emissions from the transportation plan must be less than or equal to the emissions budget values. The results of the emissions analysis for each pollutant are shown in Tables 2, 7, and 8. NCDENR provided the emissions factors used in this analysis. A description of emissions factor development provided by NCDENR is included in Appendix B.

4.1 Emissions Model

NCDENR used MOBILE 5A to develop the emissions factors. Motor vehicle emissions controls considered in the MOBILE model are a decentralized inspections and maintenance program (as required in the North Carolina SIP), the national low emitting vehicle (NLEV), and the heavy-duty diesel (HDDV) control program (final guidance dated January 30, 1998). Area specific information such as vehicle age distribution and vehicle type distribution were used rather than national default values.

4.1.1 Development of Emissions Factors

A critical element of any emissions analysis is the development and utilization of the emissions factors applied to the travel estimates. In order to assure that the emissions factors used in the conformity analysis were compatible with those used in the development of the North Carolina SIP, NCDENR provides emission factors and model inputs for each maintenance area in North Carolina. The MOBILE 5A emissions factor model was used to develop the emissions factors in March 1998. The MOBILE 5A input files for this effort are included in Appendix C.

4.2 Transportation Control Measures

The North Carolina State Implementation Plan lists no transportation control measures pertaining to this maintenance area.

4.3 VMT Normalization

Base year (1994) vehicle miles of travel from the TRIAD Regional Travel Demand Model may differ significantly from the estimate of vehicle miles of travel used to develop the SIP. The VMT used to develop the SIP is derived from NCDOT's Universe traffic count program. Typically travel demand models estimate more travel than this system counts. The difference is typically in the 20 percent range for countywide totals. In this report, travel model VMT for 1994 each analysis is adjusted to Universe VMT using the method and calibration factor discussed in Appendix E. The VMT normalization was jointly developed by NCDOT, NCDENR, and FHWA. EPA has accepted this method. Interagency efforts are currently underway to develop a memorandum of understanding on conformity consultation procedures which will formalize the agreement to use the VMT normalization method as requested by USEPA.

Future year comparisons used in the conformity determination are based on VMT from the Triad Regional Model. Model VMT for each analysis year is normalized using the calibration factor developed above. Because the largest difference is miles of local streets, two normalization factors are calculated - one for local streets and one for non-local streets. To calculate these factors 1994 Universe VMT is divided by 1994 Triad Model VMT to produce two factors: 0.8493 for local streets and 1.4476 non-for local streets. Conformity estimates for ozone precursors use VMT normalization. Future year (2004, 2014, 2020, and 2025) Triad Model VMT is multiplied by these factors before applying the emissions rates supplied by NCDENR. Appendix F contains the calculation of the factors. Appendix F contains the emissions calculations including VMT normalization.

4.4 Off-Model Analysis

A number of projects in this urban area fall outside the scope of traditional travel demand modeling. Their effect on emissions is accounted for by off-model calculations. FHWA Region IV's *Off-Model Air Quality Analysis: A Compendium of Practice* provided guidance on estimating emissions effects of these projects. The effects of these projects are included in the final conformity number shown in Table 2. Table 9 lists the projects which required off-model calculations.

Table 7: Daily NOX Emission Comparison

Year	Long Range Plan Emissions (KG/Day)	SIP Emissions (KG/Day)
1994	23,468	39,715
1999	20,434	39,920
2002	18,614	39,394
2004	17,400	39,798
2014	18,698	39,798
2020	20,321	39,798
2025	22,043	39,798

Table 8: Daily VOC Emission Comparison

Year	Long Range Plan Emissions (KG/Day)	SIP Emissions (KG/Day)
1994	16,570	23,671
1999	14,672	23,336
2002	13,533	23,481
2004	12,774	23,844
2014	15,245	23,844
2020	16,265	23,844
2025	17,595	23,844

4.5 Donut Area Project Analysis

The Greensboro Urban Area does not have any donut area projects.

4.6 Budget Test By Pollutant

The Greensboro Urban Area is a maintenance area only for ozone. USEPA approved the SIP re-designating Guilford County to maintenance for ozone on November 8, 1993. The Federal Register notice containing the summary emissions budget is included in Appendix A. In addition the actual pages from the maintenance plan detailing the

Table 9: Projects Requiring Off-Model Calculations of Emissions

TIP Number	Description	First Analysis Year
I-2402	Installation of 14 cameras, 6 changeable message signs, and 198 detection devices	2004
I-2201	Installation of 17 cameras, 5 changeable message signs, and 137 detection devices	2004
R-2413	Installation of 2 changeable message signs and 7 detection devices	2004
R-0984	Installation of 5 cameras, 5 changeable message signs, and 237 detection devices	2004
High Point Road	(EXISTING)	2004
R-2309	Installation of 12 cameras, 10 changeable message signs, and 228 detection devices	2014
U-2524	Installation of 20 cameras, 6 changeable message signs, and 240 detection devices	2014

Table 9: Projects Requiring Off-Model Calculations of Emissions (continued)

TIP Number	Description	First Analysis Year
U-2581	Installation of 2 cameras, 4 changeable message signs, and 35 detection devices	2014
US 421	Installation of 3 changeable message signs, and 29 detection devices	
U-2525	Installation of 13 cameras, 4 changeable message signs, and 158 detection devices	2020
	Construction of the Multi-Modal Center	2004
	Transit Service	1994
	Vanpool Program	2004

emissions budget are included in Appendix A. Ozone has two precursors: oxides of nitrogen (NOX) and volatile organic compounds (VOC). Table 7 documents the emissions budget comparison for NOX. Table 8 documents the emissions budget comparison for VOCs.

That maintenance plan included emissions budgets for 1999, 2002, and 2004. 40 CFR Part 93. 106 requires that transportation emissions be estimated at, minimum, ten year intervals beginning with the base year of the travel demand model. As discussed elsewhere the base year of the Triad Regional Model is 1994. For this analysis travel

model runs were made for 1994, 2004, 2014, 2020, and 2025. Emissions for 1999 and 2002 are interpolated between 1994 and 2004. That maintenance plan included emissions budgets for 1999, 2002, and 2004..

5. Public Involvement and Interagency Consultation

Public review of this report was handled in accordance with the Greensboro Urban Area public participation policy for Transportation Plans. A copy of the public participation policy is included in Appendix H. Comments from the public participation process are incorporated into the final Conformity Analysis and Determination Report. Those comments that are written are included in Appendix I of the final report.

6. Conclusion

Based on the analysis and consultation discussed above the proposed 2025 Greensboro Urban Area transportation plan conforms to the purpose of the North Carolina State Implementation Plan. In every analysis year for every pollutant, the emissions expected from the implementation of the long range plan are less than the emissions budget for Guilford County approved in the Maintenance Plan.

Appendix A: Federal Register SIP Notice and Emissions Budgets

ten years following the initial ten-year period. To provide for the possibility of future NAAQS violations, the maintenance plan must contain contingency measures, with a schedule for implementation adequate to assure prompt correction of any air quality problems.

In this notice, EPA is approving the State of North Carolina's maintenance plan for the Greensboro/Winston-Salem/High Point area because EPA finds that the State of North Carolina's submittal meets the requirements of section 175A.

A. Emissions Inventory—Base Year Inventory

On November 13, 1992, the State of North Carolina submitted comprehensive inventories of VOC, NO_x, and CO emissions from the Greensboro/Winston-Salem/High Point area. The inventories included biogenic, area, stationary, and mobile sources using 1990 as the base year for calculations to demonstrate maintenance. The 1990 inventory is considered representative of attainment conditions because the NAAQS was not violated during 1990. The 1990 Base Year Emission Inventory for the Greensboro/Winston-Salem/High Point area has been submitted to EPA in SIP Air Pollutant Inventory Management Subsystem (SAMS) format.

The State of North Carolina submittal contains the detailed inventory data and summaries by county and source category. This comprehensive base year emissions inventory was submitted in the SAMS format. Finally, this inventory was prepared in accordance with EPA guidance. A summary of the base year and projected maintenance year inventories are shown in the following three tables. Refer to the TSD accompanying this notice for more in-depth details regarding the base year inventory for the Greensboro/Winston-Salem/High Point area.

VOC EMISSION INVENTORY SUMMARY

[Tons per day]

	1990	1993	1996	1999	2002	2004
Point	82.30	83.69	74.04	63.42	66.59	68.59
Area	180.76	178.25	179.54	180.67	183.16	184.68
Mobile	88.30	73.91	73.41	73.54	74.06	74.97
Total	351.36	335.85	326.99	317.63	323.81	328.24

NO_x EMISSION INVENTORY SUMMARY

[Tons per day]

	1990	1993	1996	1999	2002	2004
Point	23.04	24.14	25.24	26.31	27.23	27.81
Area	0.29	0.29	0.29	0.29	0.29	0.29
Mobile	99.76	100.01	100.40	96.96	91.13	90.28
Total	123.09	124.44	125.93	123.56	118.65	118.38

CO EMISSION INVENTORY SUMMARY

[Tons per day]

	1990	1993	1996	1999	2002	2004
Point	5.37	5.51	5.71	5.90	6.06	6.15
Area	40.98	41.00	41.01	41.02	41.03	41.04
Mobile	710.25	612.50	601.28	593.39	601.53	612.92
Total	756.60	659.01	648.00	640.31	648.62	660.11

B. Demonstration of Maintenance—Projected Inventories Total VOC, NO_x, and CO emissions were projected from the 1990 base year out to 2004. These projected inventories were prepared in accordance with EPA guidance. Refer to EPA's TSD accompanying this notice for more in-depth details regarding the projected inventory for the Greensboro/Winston-Salem/High Point area. The projections indicate that VOC and CO emissions decrease steadily from 1990 through 2004. However, the projections show an increase over the 1990 NO_x level of 1.10% in 1993, 2.31% in 1996, and 0.38% in 1999. To date, this level of increase in NO_x has not caused a violation of the NAAQS. EPA believes that the emissions projections demonstrate that the area will continue to maintain the O_3 NAAQS because this area achieved attainment through VOC controls and reductions. The projected emission inventories were submitted in the SAMS format.

C. Verification of Continued Attainment

Continued attainment of the O_3 NAAQS in the Greensboro/Winston-Salem/High Point area depends, in part, on the State of North Carolina's efforts toward tracking indicators of continued attainment during the maintenance period. The State of North Carolina's contingency plan is triggered by two indicators, an air quality violation or the periodic emissions inventory exceeds the baseline emission inventory by more than 10%. As stated in the maintenance plan, the NCDEHNR will be developing these periodic emissions inventories every three years beginning in 1996. These periodic inventories will help to verify continued attainment. Refer to the TSD accompanying this notice for a more complete discussion of the indicators the State is tracking and the contingency measures.

April 3, 1998

MEMORANDUM

TO: David Hyder, NCDOT
FROM: Behshad Norowzi, DAQ

SUBJECT: Mobile Source Emissions Budgets for Davidson and Forsyth Counties

As you requested earlier this week, the tables below summarizes the VOC and NOx emissions budgets for the two counties for 1990, 1993, 1996, 1999, 2002 and 2004. Also, copies of SIP pages containing summary of Mobile source emissions for Forsyth and Davidson Counties are enclosed. If you have any questions concerning this information please give me a call at 733-1805.

Summary of Mobile Source Emissions in Davidson County

Year	VOC Emissions (TPD)	NOx Emissions (TPD)
1990	11.29	14.47
1993	8.99	13.84
1996	8.51	13.31
1999	8.21	12.83
2002	8.06	12.31
2004	8.07	12.24

Summary of Mobile Source Emissions in Forsyth County

Year	VOC Emissions (TPD)	NOx Emissions (TPD)
1990	24.49	25.34
1993	18.69	25.29
1996	18.37	25.38
1999	18.26	25.22
2002	18.33	24.99
2004	18.59	25.29

cc: Jill Vitas
Vicki Chandler
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Sheila Holman

1990

TABLE 4-3 SUMMARY OF MOBILE SOURCE EMISSIONS FOR DAVIDSON COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile	11.29	14.47	95.67
SUBCATEGORY TOTAL	11.29	14.47	95.67
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	1.71	0.02	14.70
Airport Service	0.00	0.00	0.00
Recreational	0.07	0.00	0.22
Light Commercial	0.22	0.03	3.74
Industrial	0.11	0.21	1.52
Construction	0.33	2.18	1.95
Agricultural	0.04	0.18	0.18
Logging	0.03	0.00	0.07
Recreational Marine	1.04	0.05	2.88
Aircraft Engines	0.002	0.00	0.07
Railroad Locomotives	0.07	0.85	0.14
SUBCATEGORY TOTAL	3.62	3.52	25.47
TOTAL FOR MOBILE SOURCES	14.91	17.99	121.14

TABLE 5.1-3 SUMMARY OF 1993 MOBILE SOURCE EMISSIONS FOR DAVIDSON COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile	8.99	13.84	80.97
SUBCATEGORY TOTAL	8.99	13.84	80.97
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	1.77	0.03	15.20
Airport Service	0.00	0.00	0.00
Recreational	0.07	0.00	0.23
Light Commercial	0.23	0.03	3.86
Industrial	0.11	0.22	1.58
Construction	0.34	2.26	2.02
Agricultural	0.04	0.18	0.19
Logging	0.03	0.00	0.07
Recreational Marine	1.08	0.05	2.97
Aircraft Engines	0.00	0.00	0.07
Railroad Locomotives	0.07	0.79	0.13
SUBCATEGORY TOTAL	3.74	3.56	26.32
TOTAL FOR MOBILE SOURCES	12.73	17.40	107.29

TABLE 5.2-3 SUMMARY OF 1996 MOBILE SOURCE EMISSIONS FOR DAVIDSON COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile	8.51	13.31	75.20
SUBCATEGORY TOTAL	8.51	13.31	75.20
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	1.83	0.03	15.66
Airport Service	0.00	0.00	0.00
Recreational	0.07	0.00	0.24
Light Commercial	0.24	0.03	3.98
Industrial	0.11	0.22	1.62
Construction	0.35	2.32	2.08
Agricultural	0.04	0.19	0.20
Logging	0.03	0.00	0.08
Recreational Marine	1.11	0.06	3.06
Aircraft Engines	0.00	0.00	0.07
Railroad Locomotives	0.06	0.75	0.12
SUBCATEGORY TOTAL	3.84	3.60	27.11
TOTAL FOR MOBILE SOURCES	12.35	16.91	102.31

TABLE 5.3-3 SUMMARY OF 1999 MOBILE SOURCE EMISSIONS FOR DAVIDSON COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile	8.21	12.83	71.03
SUBCATEGORY TOTAL	8.21	12.83	71.03
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	1.88	0.03	16.14
Airport Service	0.00	0.00	0.00
Recreational	0.07	0.00	0.25
Light Commercial	0.24	0.03	4.10
Industrial	0.12	0.18	1.67
Construction	0.36	1.89	2.15
Agricultural	0.04	0.17	0.20
Logging	0.03	0.00	0.08
Recreational Marine	1.15	0.06	3.16
Aircraft Engines	0.00	0.00	0.08
Railroad Locomotives	0.06	0.73	0.12
SUBCATEGORY TOTAL	3.95	3.09	27.95
TOTAL FOR MOBILE SOURCES	12.16	15.92	98.98

TABLE 5.4-3 SUMMARY OF 2002 MOBILE SOURCE EMISSIONS FOR DAVIDSON COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile	8.06	12.31	70.01
SUBCATEGORY TOTAL	8.06	12.31	70.01
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	1.92	0.03	16.50
Airport Service	0.00	0.00	0.00
Recreational	0.07	0.00	0.25
Light Commercial	0.25	0.03	4.19
Industrial	0.12	0.10	1.71
Construction	0.37	1.21	2.19
Agricultural	0.04	0.13	0.21
Logging	0.03	0.00	0.08
Recreational Marine	1.17	0.06	3.23
Aircraft Engines	0.00	0.00	0.08
Railroad Locomotives	0.06	0.72	0.12
SUBCATEGORY TOTAL	4.03	2.28	28.56
TOTAL FOR MOBILE SOURCES	12.09	14.59	98.57

2004

TABLE 4-3 SUMMARY OF MOBILE SOURCE EMISSIONS FOR DAVIDSON COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile *	8.066	12.239	70.545
SUBCATEGORY TOTAL	8.066	12.239	70.545
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	1.949	0.027	16.714
Airport Service	0.000	0.000	0.000
Recreational	0.075	0.000	0.255
Light Commercial	0.251	0.035	4.247
Industrial	0.122	0.074	1.732
Construction	0.373	0.983	2.222
Agricultural	0.044	0.109	0.208
Logging	0.029	0.000	0.081
Recreational Marine	1.188	0.059	3.270
Aircraft Engines	0.003	0.001	0.087
Railroad Locomotives	0.058	0.714	0.115
SUBCATEGORY TOTAL	4.092	2.002	28.931
TOTAL FOR MOBILE SOURCES	12.158	14.241	99.476

1990

TABLE 4-6 SUMMARY OF MOBILE SOURCE EMISSIONS FOR FORSYTH COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile	24.49	25.34	198.44
SUBCATEGORY TOTAL	24.49	25.34	198.44
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	3.60	0.05	30.86
Airport Service	0.09	0.53	0.77
Recreational	0.14	0.00	0.47
Light Commercial	0.46	0.06	7.84
Industrial	0.23	0.44	3.20
Construction	0.69	4.58	4.10
Agricultural	0.08	0.37	0.38
Logging	0.05	0.00	0.15
Recreational Marine	2.19	0.11	6.04
Aircraft Engines	0.02	0.00	0.73
Railroad Locomotives	0.02	0.38	0.05
SUBCATEGORY TOTAL	7.57	6.52	54.59
TOTAL FOR MOBILE SOURCES	32.06	31.86	253.03

TABLE 5.1-6 SUMMARY OF 1993 MOBILE SOURCE EMISSIONS FOR FORSYTH COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile	18.69	25.29	159.24
SUBCATEGORY TOTAL	18.69	25.29	159.24
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	3.68	0.05	31.71
Airport Service	0.09	0.55	0.79
Recreational	0.14	0.00	0.48
Light Commercial	0.48	0.07	8.06
Industrial	0.23	0.45	3.29
Construction	0.71	4.71	4.22
Agricultural	0.08	0.38	0.39
Logging	0.05	0.00	0.15
Recreational Marine	2.25	0.11	6.20
Aircraft Engines	0.03	0.00	0.77
Railroad Locomotives	0.02	0.35	0.05
SUBCATEGORY TOTAL	7.76	6.67	56.11
TOTAL FOR MOBILE SOURCES	26.45	31.96	215.35

TABLE 5.2-6 SUMMARY OF 1996 MOBILE SOURCE EMISSIONS FOR FORSYTH COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile	18.37	25.38	155.26
SUBCATEGORY TOTAL	18.37	25.38	155.26
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	3.79	0.05	32.48
Airport Service	0.09	0.56	0.81
Recreational	0.15	0.00	0.50
Light Commercial	0.49	0.07	8.25
Industrial	0.24	0.46	3.37
Construction	0.72	4.82	4.32
Agricultural	0.09	0.39	0.40
Logging	0.06	0.00	0.16
Recreational Marine	2.31	0.11	6.36
Aircraft Engines	0.03	0.00	0.82
Railroad Locomotives	0.01	0.33	0.04
SUBCATEGORY TOTAL	7.98	6.79	57.51
TOTAL FOR MOBILE SOURCES	26.35	32.17	212.77

TABLE 5.3-6 SUMMARY OF 1999 MOBILE SOURCE EMISSIONS FOR FORSYTH COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile	18.26	25.22	152.93
SUBCATEGORY TOTAL	18.26	25.22	152.93
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	3.88	0.05	33.229
Airport Service	0.10	0.57	0.83
Recreational	0.15	0.00	0.51
Light Commercial	0.50	0.07	8.44
Industrial	0.24	0.36	3.44
Construction	0.74	3.91	4.42
Agricultural	0.09	0.35	0.41
Logging	0.06	0.00	0.16
Recreational Marine	2.36	0.12	6.50
Aircraft Engines	0.03	0.00	0.87
Railroad Locomotives	0.01	0.33	0.04
SUBCATEGORY TOTAL	8.160	5.760	58.849
TOTAL FOR MOBILE SOURCES	26.42	30.98	211.78

TABLE 5.4-6 SUMMARY OF 2002 MOBILE SOURCE EMISSIONS FOR FORSYTH COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile	18.33	24.99	156.45
SUBCATEGORY TOTAL	18.33	24.99	156.45
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	3.94	0.06	33.81
Airport Service	0.10	0.58	0.84
Recreational	0.15	0.00	0.52
Light Commercial	0.51	0.07	8.59
Industrial	0.25	0.20	3.50
Construction	0.75	2.48	4.49
Agricultural	0.09	0.27	0.42
Logging	0.06	0.00	0.16
Recreational Marine	2.40	0.12	6.61
Aircraft Engines	0.03	0.01	0.92
Railroad Locomotives	0.01	0.32	0.04
SUBCATEGORY TOTAL	8.29	4.11	59.90
TOTAL FOR MOBILE SOURCES	26.62	29.10	216.35

2004

TABLE 4-6 SUMMARY OF MOBILE SOURCE EMISSIONS FOR FORSYTH COUNTY

Source Category	VOC Emissions TPD	NOx Emissions TPD	CO Emissions TPD
Highway Mobile Source Emissions			
Highway Mobile *	18.589	25.293	160.700
SUBCATEGORY TOTAL	18.589	25.293	160.700
Non-highway Mobile Source Emissions			
Off-road Mobile			
Lawn and Garden	3.983	0.055	34.162
Airport Service	0.097	0.590	0.849
Recreational	0.152	0.000	0.522
Light Commercial	0.512	0.071	8.680
Industrial	0.250	0.152	3.539
Construction	0.762	2.010	4.541
Agricultural	0.091	0.223	0.425
Logging	0.058	0.000	0.165
Recreational Marine	2.428	0.120	6.683
Aircraft Engines	0.031	0.005	0.956
Railroad Locomotives	0.014	0.317	0.040
SUBCATEGORY TOTAL	8.378	3.543	60.562
TOTAL FOR MOBILE SOURCES	26.967	28.836	221.262

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Environmental Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
A. Preston Howard, Jr., PE., Director

DEHNR

Air Quality Section

October 20, 1994

Marion R. Poole, Ph.D., P.E.
Manager
Statewide Planning Branch
NC DOT/DOH
P.O. Box 25201
Raleigh, NC 27611-5201

Dear Dr. Poole:

Enclosed are the SIP emissions budgets for each city that corresponds to the travel demand model (TDM) boundary. This memorandum is to formalize all of the discussions on the SIP budgets over the past few weeks. These emissions budgets were calculated by multiplying the budget for the entire county by the population in the travel demand model domain and dividing by the total county population:

$$\text{County SIP emissions budget} * \frac{\text{TDM population}}{\text{county population}}$$

For example, the 1990 VOC emissions in the Greensboro TDM boundary are:

$$31.04 \text{ TPD} * \frac{226814}{347420} = 20.26 \text{ TPD}$$

The TDM population was estimated by Carol Hanchette in our Environmental Statistics and GIS Section through a GIS application. The emissions budgets are provided for all cities located in nonattainment and maintenance areas.

P.O. Box 29535, Raleigh, North Carolina 27626-0535 Telephone 919-733-3340 FAX 919-733-1812

In some cases, the link emissions generated for our Urban Airshed Modeling project were used to apportion the emissions to the travel demand model area. The emissions were calculated as follows:

$$\text{County SIP emissions budget} * \frac{\text{Link emissions in TDM area}}{\text{Link emissions in county}}$$

Please call Sheila Holman at 715-0971 or me at 715-0587 if you have any questions.

Sincerely,

Brock M. Nicholson, P.E.
Assistant Chief for Planning

cc: Alan Klimek, P.E.
Sheila Holman
David Hyder, P.E.
Donnie Redmond
Deidre Hinkle, P.E.
Lee Daniel

DATE 08-30-94	TDM POPULATION	COUNTY POPULATION	TDM VOC 1990	COUNTY-VOC TONS/DAY 1990	TDM-VOC 1993	COUNTY-VOC TONS/DAY 1993	TDM-VOC 1996	COUNTY-VOC TONS/DAY 1996	TDM-VOC 1999	COUNTY-VOC TONS/DAY 1999	TDM-VOC 2002	COUNTY-VOC TONS/DAY 2002	TDM-VOC 2004	COUNTY-VOC TONS/DAY 2004
GREENSBORO														
GUILFORD	226814	347420	20.28	31.04	15.80	24.20	15.66	23.98	15.68	23.98	15.78	24.17	16.04	24.57
HIGHPOINT														
GUILFORD	78894	347420	7.05	31.04	5.50	24.20	5.45	23.98	5.45	23.98	5.49	24.17	5.58	24.57
DAVIDSON	26400	126677	2.35	11.29	1.87	8.99	1.77	8.51	1.71	8.21	1.68	8.06	1.68	8.07
			9.40		7.37		7.22		7.16		7.17		7.26	
OUTSIDE OF MODELING DOMAIN FOR DAVIDSON			8.94		7.12		6.74		8.50		6.38		6.39	
OUTSIDE OF MODELING DOMAIN FOR GUILFORD			3.73		2.91		2.88		2.88		2.90		2.95	

DATE: 08-30-94	TDM POPULATION	COUNTY POPULATION	TDM NOX 1990	COUNTY NOX TONS/DAY 1990	TDM NOX 1993	COUNTY NOX TONS/DAY 1993	TDM NOX 1996	COUNTY NOX TONS/DAY 1996	TDM NOX 1999	COUNTY NOX TONS/DAY 1999	TDM NOX 2002	COUNTY NOX TONS/DAY 2002	TDM NOX 2004	COUNTY NOX TONS/DAY 2004
GREENSBORO														
GUILFORD	226814	347420	26.20	40.13	26.57	40.70	26.88	41.18	28.94	41.27	26.64	40.80	26.94	41.26
HIGHPOINT														
GUILFORD	78894	347420	9.11	40.13	9.24	40.70	9.35	41.18	9.37	41.27	9.27	40.80	9.37	41.26
DAVIDSON	26400	126677	3.02	14.47	2.88	13.84	2.77	13.31	2.67	12.83	2.57	12.31	2.55	12.24
			12.13		12.12		12.12		12.04		11.84		11.92	
OUTSIDE OF MODELING DOMAIN FOR DAVIDSON			11.45		10.96		10.54		10.16		9.74		9.69	
OUTSIDE OF MODELING DOMAIN FOR GUILFORD			4.82		4.89		4.94		4.95		4.90		4.95	

DATE 09-12-94	COUNTY 1990 POPULATION	TDM 1990 POPULATION	COUNTY 1990 POPULATION	TDM 1990 POPULATION	COUNTY 1990 POPULATION	TDM 1990 POPULATION	COUNTY 1990 POPULATION	TDM 1990 POPULATION	COUNTY 1990 POPULATION	TDM 1990 POPULATION	COUNTY 1990 POPULATION	TDM 1990 POPULATION
	181835	178812	181835	178812	181835	178812	181835	178812	181835	178812	181835	178812
	RATIO	0.983	RATIO	0.983	RATIO	0.983	RATIO	0.983	RATIO	0.983	RATIO	0.983
	TDM-VOC	COUNTY-VOC TONS/DAY	TDM-VOC	COUNTY-VOC TONS/DAY	TDM-VOC	COUNTY-VOC TONS/DAY	TDM-VOC	COUNTY-VOC TONS/DAY	TDM-VOC	COUNTY-VOC TONS/DAY	TDM-VOC	COUNTY-VOC TONS/DAY
HAM/CHAPEL HILL	1990	1990	[illegible]	1993	1996	1996	[illegible]	1999	2002	2002	2004	2004
DURHAM	17.95	18.25	12.15	12.36	12.58	12.79	13.34	13.57	13.98	14.22	14.49	14.74
	TDM-NOX	COUNTY-NOX TONS/DAY	TDM-NOX	COUNTY-NOX TONS/DAY	TDM-NOX	COUNTY-NOX TONS/DAY	TDM-NOX	COUNTY-NOX TONS/DAY	TDM-NOX	COUNTY-NOX TONS/DAY	TDM-NOX	COUNTY-NOX TONS/DAY
	1990	1990	1993	1993	1996	1996	1999	1999	2002	2002	2004	2004
DURHAM	20.33	20.67	16.91	17.20	18.01	18.31	18.71	19.03	19.11	19.43	19.69	20.02

DATE 09-12-94

	TDM POPULATION	COUNTY POPULATION	COUNTY 1993 LINK-VMT	TDM 1993 LINK-VMT	COUNTY 1996 LINK-VMT	TDM 1996 LINK-VMT	COUNTY 1999 LINK-VMT	TDM 1999 LINK-VMT	COUNTY 2002 LINK-VMT	TDM 2002 LINK-VMT	COUNTY 2004 LINK-VMT	TDM 2004 LINK-VMT
	318992	423380	6,151,744	4,748,144	6,681,895	5,178,390	7,212,045	5,608,636	7,742,196	6,038,882	8,095,630	6,325,712
	RATIO	0.753	RATIO	0.772	RATIO	0.775	RATIO	0.778	RATIO	0.780	RATIO	0.781

	TDM-VOC 1990	COUNTY-VOC TONS/DAY 1990	TDM-VOC 1993	COUNTY-VOC TONS/DAY 1993	TDM-VOC 1996	COUNTY-VOC TONS/DAY 1996	TDM-VOC 1999	COUNTY-VOC TONS/DAY 1999	TDM-VOC 2002	COUNTY-VOC TONS/DAY 2002	TDM-VOC 2004	COUNTY-VOC TONS/DAY 2004
RALEIGH WAKE	35.12	46.61	24.33	31.52	25.37	32.74	27.02	34.74	28.37	36.37	29.47	37.71

	TDM-NOX 1990	COUNTY-NOX TONS/DAY 1990	TDM-NOX 1993	COUNTY-NOX TONS/DAY 1993	TDM-NOX 1996	COUNTY-NOX TONS/DAY 1996	TDM-NOX 1999	COUNTY-NOX TONS/DAY 1999	TDM-NOX 2002	COUNTY-NOX TONS/DAY 2002	TDM-NOX 2004	COUNTY-NOX TONS/DAY 2004
RALEIGH WAKE	38.29	48.16	30.95	40.10	33.08	42.69	34.51	44.38	35.43	45.42	36.61	46.85

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DATE: 09-13-94

ALL EMISSIONS ARE IN TONS/DAY
JULY 7-10 EPISODE

		NON-LINK BUDGET VOC	NON-LINK TDM VOC	LINK TDM VOC	TOTAL TDM VOC	NON-LINK BUDGET NOX	NON-LINK TDM NOX	LINK TDM NOX	TOTAL TDM NOX
GASTONIA									
YEAR:1990		8.34	6.14	4.508	10.65	5.32	3.92	7.79	11.71
YEAR:1999		5.92	4.69	2.94	7.63	5.09	4.03	6.08	10.11
YEAR:2005		5.95	4.73	2.84	7.57	5.10	4.05	5.48	9.53

COUNTY 1990 POPULATION	TDM 1990 POPULATION	COUNTY 1999 LINK-VMT	TDM 1999 LINK-VMT	COUNTY 2005 LINK-VMT	TDM 2005 LINK-VMT
175093	128985	2,297,313	1,819,139	2,568,685	2,040,633
RATIO	0.737	RATIO	0.792	RATIO	0.794

Appendix B: Discussion of Emission Factor Development

Emission Factor Estimation Procedure for the SIP[4]

The North Carolina Division of Air Quality calculated the required mobile source emission factors using MOBILE 5A. The MOBILE model has been upgraded by the U.S. Environmental Protection Agency (EPA) to MOBILE 5b; however, the original budget included in the TRIAD redesignation package was calculated using MOBILE 5A. Therefore to ensure consistency, MOBILE 5A was used throughout this analysis. Data inputs (vehicle mix, vehicle age distribution, temperatures, speed by functional classification, and information on control programs in currently in place) were collected form a variety of sources including EPA, NCDOT, and other relevant state and local agencies.

Emissions Budgets for the SIP

The emissions budgets for carbon monoxide (CO), volatile organic compounds (VOC), and oxides of nitrogen (NO_X) were developed as part of the maintenance demonstration for the Triad nonattainment area. The NO_X and VOC emissions budgets were calculated on an episode day basis. These budgets set the limits for motor vehicle emissions to help the area to maintain the public health standards for ten years through 2005. The maintenance plan containing the mobile emission budgets was adopted by the state and approved by EPA into the official State Implementation Plan. The maintenance plan was deemed acceptable for protecting the public health through 2005.

MOBILE 5A was used to generate VOC, NO_X, and CO emission factor for each vehicle class and read type. Using a spreadsheet, daily vehicle miles traveled (DVMT) for the summer season were divided by seasonal adjustment factors and then multiplied by the I/M and non-I/M scenario emissions in the spreadsheet to calculate CO, VOC, and NO_X emissions these emissions were calculated for the base year and each of the projection years on a tons per day basis for the TRIAD counties.

Please refer to the Greensboro/Winston-Salem/High Point Redesignation Package - Mobile Source Estimation for further details of the inputs and calculation methodologies.

[4] Prepared by the North Carolina Department of Environment and Natural Resources

Appendix C: Mobile 5A Output Files

TYPICAL SUMMER DAY **GREENSBORO**

TDM SPEEDS MOBILE MODEL EMISSION FACTORS IN GRAMS/MILE

INSPECTION & MAINTENANCE

	1994 VOC	2004 Detergent VOC	2014 Detergent VOC	2020 Detergent VOC	1994 NOX	2004 Detergent NOX	2014 Detergent NOX	2020 Deterg NOX
Interstate-Urban	1.440	1.002	0.920	0.919	2.865	1.894	1.370	1.33
Other F/E-Urban	1.342	0.917	0.829	0.806	2.398	1.611	1.262	1.34
Other PA-Urban	1.898	1.290	1.194	1.216	2.114	1.435	1.165	1.14
Minor Art.-Urban	1.762	1.192	1.071	1.061	1.927	1.324	1.113	1.09
Collector-Urban	1.729	1.167	1.046	1.035	1.813	1.263	1.083	1.07
Local-Urban	1.683	1.135	1.022	1.011	2.008	1.380	1.154	1.13
Interstate-Rural	1.296	0.915	0.834	0.825	4.326	2.748	1.886	1.84
Other PA-Rural	1.312	0.909	0.820	0.819	3.036	1.987	1.511	1.48
Minor Art.-Rural	1.484	1.018	0.915	0.914	2.197	1.486	1.214	1.19
Major Coll.-Rural	1.411	0.987	0.874	0.864	2.146	1.451	1.192	1.17
Minor Coll.-Rural	1.415	0.966	0.872	0.862	2.021	1.383	1.159	1.14
Local-Rural	1.379	0.945	0.853	0.843	1.869	1.290	1.104	1.09

MOBILE MODEL EMISSION FACTORS IN GRAMS/MILE

NO INSPECTION & MAINTENANCE

	1994 VOC	2004 Detergent VOC	2014 Detergent VOC	2020 Detergent VOC	1994 NOX	2004 Detergent NOX	2014 Detergent NOX	2020 Deterg NOX
Interstate-Urban	1.723	1.249	1.147	1.138	2.896	1.935	1.411	1.38
Other F/E-Urban	1.613	1.158	1.049	1.008	2.430	1.661	1.305	1.40
Other PA-Urban	2.306	1.636	1.503	1.533	2.146	1.488	1.210	1.19
Minor Art.-Urban	2.149	1.520	1.360	1.350	1.960	1.377	1.158	1.14
Collector-Urban	2.112	1.490	1.329	1.317	1.847	1.308	1.137	1.12
Local-Urban	2.047	1.448	1.295	1.284	2.041	1.435	1.200	1.18
Interstate-Rural	1.521	1.112	1.019	1.010	4.364	2.806	1.944	1.90
Other PA-Rural	1.563	1.136	1.025	1.015	3.074	2.042	1.566	1.54
Minor Art.-Rural	1.794	1.293	1.167	1.156	2.229	1.540	1.261	1.24
Major Coll.-Rural	1.705	1.250	1.107	1.095	2.179	1.497	1.246	1.22
Minor Coll.-Rural	1.713	1.233	1.108	1.096	2.054	1.438	1.214	1.19
Local-Rural	1.672	1.205	1.083	1.072	1.904	1.343	1.157	1.14

1JULY, 1994-NO I/M-(GREENSBORO,DMV AGE,HDDV NOX CREDIT,NLEV,TDM SPEEDS 05-06-99)
MOBILE5a (26-Mar-93)
0 Emission Factor Modification Profile
+

0Equation	Reg	Veh	Pol	First MY	Last MY	Base	DR	Altered
1	1	7	3	1990	1990	11.65	0.00	Yes
2	1	7	3	1991	1997	9.37	0.00	Yes
3	1	7	3	1998	2003	7.49	0.00	Yes
4	1	7	3	2004	2020	3.75	0.00	Yes

0VOC HC emission factors include evaporative HC emission factors.
0

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0URBAN INTERSTATE Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.763	0.061	0.029		0.011	0.005	0.001	0.126	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.66	2.53	2.37	2.48	4.26	0.39	0.59	1.23	7.12	1.723
Exhaust HC:	0.74	1.32	1.25	1.30	1.09	0.39	0.59	1.23	1.61	0.855
Evaporat HC:	0.38	0.58	0.48	0.55	2.15				4.96	0.379
Refuel L HC:	0.19	0.26	0.26	0.26	0.42					0.173
Runing L HC:	0.28	0.30	0.31	0.30	0.51					0.247
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.068
Exhaust CO:	9.87	17.19	16.01	16.81	30.60	0.83	0.98	5.60	11.87	10.137
Exhaust NOX:	1.53	2.14	2.08	2.12	5.79	1.42	1.71	11.62	1.03	2.896

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0URBAN FREEWAY Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh

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+
 Veh. Speeds:      46.0      46.0      46.0                46.0      46.0      46.0      46.0      46.0
     VMT Mix:      0.822     0.058     0.027               0.010     0.005     0.001     0.073     0.004
   ZEV Fract:      0.00 %    0.00 %
0Composite Emission Factors (Gm/Mile)
 VOC       HC:     1.53      2.40      2.24      2.35      4.05      0.36      0.54      1.13      7.04     1.613
 Exhaust   HC:     0.68      1.23      1.17      1.21      0.96      0.36      0.54      1.13      1.53     0.761
 Evaporat  HC:     0.38      0.58      0.48      0.55      2.15                                    4.96     0.397
 Refuel L  HC:     0.19      0.26      0.26      0.26      0.42                                             0.183
 Runing L  HC:     0.21      0.25      0.26      0.26      0.43                                             0.200
 Rsting L  HC:     0.08      0.08      0.07      0.08      0.08                                    0.56     0.072
 Exhaust   CO:     9.06     16.16     14.94     15.77     30.25      0.79      0.94      5.35     10.74     9.527
 Exhaust  NOX:     1.54      2.17      2.10      2.15      6.00      1.52      1.83     12.45      1.06     2.430
-----------------------------------------------------------------------------------------------------------------
0Emission factors are as of July 1st of the indicated calendar year.
 LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied  basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994          I/M Program: No        Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
                   Anti-tam. Program: No      Operating Mode: 20.6 / 27.3 / 20.6   Altitude:  500. Ft.
                    Reformulated Gas: No
0URBAN PRIN ART                                Minimum Temp:  68. (F)         Maximum Temp:  94. (F)
                     Period 1 RVP:  9.0        Period 2 RVP:  9.0        Period 2 Start Yr: 1992
0  Veh. Type:      LDGV      LDGT1     LDGT2      LDGT      HDGV      LDDV      LDDT      HDDV      MC     All Veh
+
 Veh. Speeds:      27.0      27.0      27.0                27.0      27.0      27.0      27.0      27.0
     VMT Mix:      0.818     0.070     0.033               0.012     0.005     0.001     0.057     0.004
   ZEV Fract:      0.00 %    0.00 %
0Composite Emission Factors (Gm/Mile)
 VOC       HC:     2.19      3.16      2.98      3.10      5.44      0.55      0.84      1.75      7.68     2.306
 Exhaust   HC:     1.03      1.78      1.69      1.75      1.93      0.55      0.84      1.75      2.17     1.155
 Evaporat  HC:     0.38      0.58      0.48      0.55      2.15                                    4.96     0.409
 Refuel L  HC:     0.19      0.26      0.26      0.26      0.42                                             0.187
 Runing L  HC:     0.52      0.47      0.48      0.47      0.85                                             0.481
 Rsting L  HC:     0.08      0.08      0.07      0.08      0.08                                    0.56     0.074
 Exhaust   CO:    13.94     22.98     21.47     22.50     42.34      1.20      1.41      8.07     19.12    14.772
 Exhaust  NOX:     1.47      2.04      2.00      2.03      5.18      1.41      1.70     11.57      0.89     2.146
-----------------------------------------------------------------------------------------------------------------
0Emission factors are as of July 1st of the indicated calendar year.
 LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied  basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994          I/M Program: No        Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
                   Anti-tam. Program: No      Operating Mode: 20.6 / 27.3 / 20.6   Altitude:  500. Ft.
                    Reformulated Gas: No
0URBAN MIN ART                                 Minimum Temp:  68. (F)         Maximum Temp:  94. (F)
```

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	30.0	30.0	30.0		30.0	30.0	30.0	30.0	30.0	
VMT Mix:	0.851	0.060	0.029		0.011	0.005	0.001	0.039	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.04	2.97	2.80	2.92	5.08	0.50	0.77	1.60	7.52	2.149
Exhaust HC:	0.94	1.64	1.56	1.62	1.66	0.50	0.77	1.60	2.01	1.037
Evaporat HC:	0.38	0.58	0.48	0.55	2.15				4.96	0.412
Refuel L HC:	0.19	0.26	0.26	0.26	0.42					0.190
Runing L HC:	0.46	0.42	0.43	0.42	0.76					0.435
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.075
Exhaust CO:	12.74	21.26	19.86	20.81	38.09	1.07	1.27	7.24	16.96	13.471
Exhaust NOX:	1.49	2.07	2.02	2.06	5.31	1.38	1.66	11.31	0.93	1.960

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN COLLECTOR Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	31.0	31.0	31.0		31.0	31.0	31.0	31.0	31.0	
VMT Mix:	0.861	0.062	0.029		0.011	0.005	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	2.00	2.92	2.75	2.87	4.98	0.49	0.75	1.56	7.47	2.112
Exhaust HC:	0.92	1.60	1.52	1.58	1.58	0.49	0.75	1.56	1.96	1.004
Evaporat HC:	0.38	0.58	0.48	0.55	2.15				4.96	0.417
Refuel L HC:	0.19	0.26	0.26	0.26	0.42					0.192
Runing L HC:	0.44	0.40	0.42	0.41	0.73					0.423
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.076
Exhaust CO:	12.39	20.76	19.40	20.32	36.93	1.04	1.23	7.01	16.32	13.187
Exhaust NOX:	1.49	2.08	2.03	2.06	5.36	1.38	1.65	11.26	0.95	1.847

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.

Reformulated Gas: No

0URBAN LOCAL

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	33.0	33.0	33.0		33.0	33.0	33.0	33.0	33.0	
VMT Mix:	0.819	0.077	0.037		0.013	0.005	0.001	0.044	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.92	2.82	2.65	2.77	4.79	0.47	0.71	1.48	7.38	2.047
Exhaust HC:	0.87	1.53	1.46	1.51	1.45	0.47	0.71	1.48	1.87	0.980
Evaporat HC:	0.38	0.58	0.48	0.55	2.15				4.96	0.418
Refuel L HC:	0.19	0.26	0.26	0.26	0.42					0.191
Runing L HC:	0.40	0.38	0.39	0.38	0.68					0.384
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.075
Exhaust CO:	11.76	19.84	18.54	19.42	34.94	0.98	1.16	6.60	15.16	12.655
Exhaust NOX:	1.50	2.10	2.04	2.08	5.44	1.37	1.65	11.20	0.97	2.041

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL INTERSTATE

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	56.0	56.0	56.0		56.0	56.0	56.0	56.0	56.0	
VMT Mix:	0.725	0.063	0.030		0.011	0.005	0.001	0.161	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.47	2.37	2.20	2.31	3.80	0.32	0.49	1.03	7.13	1.521
Exhaust HC:	0.69	1.28	1.21	1.25	0.85	0.32	0.49	1.03	1.62	0.801
Evaporat HC:	0.38	0.58	0.48	0.55	2.15				4.96	0.367
Refuel L HC:	0.19	0.26	0.26	0.26	0.42					0.167
Runing L HC:	0.14	0.18	0.18	0.18	0.29					0.121
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.066
Exhaust CO:	10.08	18.81	17.27	18.31	34.86	0.83	0.99	5.62	12.92	10.354
Exhaust NOX:	2.00	2.89	2.82	2.87	6.43	1.94	2.33	15.89	1.36	4.364

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.

0Cal. Year: 1994 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	53.0	53.0	53.0		53.0	53.0	53.0	53.0	53.0	
VMT Mix:	0.774	0.079	0.037		0.014	0.005	0.001	0.086	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.46	2.32	2.15	2.26	3.85	0.33	0.50	1.05	7.02	1.563
Exhaust HC:	0.66	1.20	1.14	1.18	0.87	0.33	0.50	1.05	1.51	0.757
Evaporat HC:	0.38	0.58	0.48	0.55	2.15				4.96	0.404
Refuel L HC:	0.19	0.26	0.26	0.26	0.42					0.183
Runing L HC:	0.15	0.20	0.21	0.20	0.33					0.147
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.071
Exhaust CO:	8.79	15.83	14.59	15.43	32.65	0.81	0.95	5.43	10.42	9.562
Exhaust NOX:	1.83	2.62	2.55	2.60	6.30	1.78	2.14	14.55	1.25	3.074

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.

0Cal. Year: 1994 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MINOR ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.791	0.087	0.041		0.015	0.005	0.001	0.056	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.66	2.53	2.37	2.48	4.26	0.39	0.59	1.23	7.12	1.794
Exhaust HC:	0.74	1.32	1.25	1.30	1.09	0.39	0.59	1.23	1.61	0.843
Evaporat HC:	0.38	0.58	0.48	0.55	2.15				4.96	0.419
Refuel L HC:	0.19	0.26	0.26	0.26	0.42					0.190
Runing L HC:	0.28	0.30	0.31	0.30	0.51					0.268
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.074
Exhaust CO:	9.87	17.19	16.01	16.81	30.60	0.83	0.98	5.60	11.87	10.783
Exhaust NOX:	1.53	2.14	2.08	2.12	5.79	1.42	1.71	11.62	1.03	2.229

0Emission factors are as of July 1st of the indicated calendar year.

LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MAJ COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.812	0.078	0.037		0.014	0.005	0.001	0.049	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.58	2.45	2.29	2.40	4.13	0.37	0.56	1.17	7.07	1.705
Exhaust HC:	0.70	1.26	1.20	1.24	1.01	0.37	0.56	1.17	1.55	0.791
Evaporat HC:	0.38	0.58	0.48	0.55	2.15				4.96	0.418
Refuel L HC:	0.19	0.26	0.26	0.26	0.42					0.190
Runing L HC:	0.24	0.27	0.28	0.27	0.46					0.232
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.074
Exhaust CO:	9.36	16.53	15.33	16.14	30.19	0.80	0.95	5.42	11.13	10.191
Exhaust NOX:	1.53	2.16	2.10	2.14	5.91	1.47	1.77	12.06	1.05	2.179

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MIN COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.821	0.080	0.038		0.014	0.005	0.001	0.037	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.58	2.45	2.29	2.40	4.13	0.37	0.56	1.17	7.07	1.713
Exhaust HC:	0.70	1.26	1.20	1.24	1.01	0.37	0.56	1.17	1.55	0.787
Evaporat HC:	0.38	0.58	0.48	0.55	2.15				4.96	0.423
Refuel L HC:	0.19	0.26	0.26	0.26	0.42					0.193
Runing L HC:	0.24	0.27	0.28	0.27	0.46					0.235
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.075
Exhaust CO:	9.36	16.53	15.33	16.14	30.19	0.80	0.95	5.42	11.13	10.259
Exhaust NOX:	1.53	2.16	2.10	2.14	5.91	1.47	1.77	12.06	1.05	2.054

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0RURAL LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.875	0.054	0.025		0.009	0.005	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.58	2.45	2.29	2.40	4.13	0.37	0.56	1.17	7.07	1.672
Exhaust HC:	0.70	1.26	1.20	1.24	1.01	0.37	0.56	1.17	1.55	0.760
Evaporat HC:	0.38	0.58	0.48	0.55	2.15				4.96	0.411
Refuel L HC:	0.19	0.26	0.26	0.26	0.42					0.191
Runing L HC:	0.24	0.27	0.28	0.27	0.46					0.235
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.076
Exhaust CO:	9.36	16.53	15.33	16.15	30.19	0.80	0.95	5.42	11.13	9.930
Exhaust NOX:	1.53	2.16	2.10	2.14	5.91	1.47	1.77	12.06	1.05	1.904

1JULY, 1994-I/M-(GREENSBORO,DMV AGE,HDDV NOX CREDIT,NLEV,TDM SPEEDS 05-06-99)
MOBILE5a (26-Mar-93)
0 Emission Factor Modification Profile
+

0Equation	Reg	Veh	Pol	First MY	Last MY	Base	DR	Altered
1	1	7	3	1990	1990	11.65	0.00	Yes
2	1	7	3	1991	1997	9.37	0.00	Yes
3	1	7	3	1998	2003	7.49	0.00	Yes
4	1	7	3	2004	2020	3.75	0.00	Yes

0I/M program selected:

0 Start year (January 1): 1991
Pre-1981 MYR stringency rate: 14%
First model year covered: 1975
Last model year covered: 2020
Waiver rate (pre-1981): 1.%
Waiver rate (1981 and newer): 1.%
Compliance Rate: 80.%
Inspection type: Computerized Test and Repair
Inspection frequency Annual
Vehicle types covered: LDGV - Yes
LDGT1 - Yes
LDGT2 - Yes
HDGV - Yes
1981 & later MYR test type: Idle
Cutpoints, HC: 220.000 CO: 1.200 NOx: 999.000
0VOC HC emission factors include evaporative HC emission factors.
0

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0URBAN INTERSTATE Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.763	0.061	0.029		0.011	0.005	0.001	0.126	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.36	2.13	1.99	2.08	3.24	0.39	0.59	1.23	6.20	1.440

Exhaust HC:	0.68	1.23	1.17	1.21	1.03	0.39	0.59	1.23	1.61	0.804
Evaporat HC:	0.26	0.41	0.34	0.39	1.45				4.03	0.265
Refuel L HC:	0.16	0.22	0.22	0.22	0.36					0.150
Runing L HC:	0.17	0.19	0.19	0.19	0.30					0.152
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.068
Exhaust CO:	8.80	15.38	14.30	15.03	28.22	0.83	0.98	5.60	11.87	9.137
Exhaust NOX:	1.49	2.09	2.03	2.08	5.96	1.42	1.71	11.62	1.03	2.865

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN FREEWAY Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	46.0	46.0	46.0		46.0	46.0	46.0	46.0	46.0	
VMT Mix:	0.822	0.058	0.027		0.010	0.005	0.001	0.073	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.26	2.01	1.88	1.97	3.07	0.36	0.54	1.13	6.12	1.342
Exhaust HC:	0.63	1.15	1.09	1.13	0.91	0.36	0.54	1.13	1.53	0.712
Evaporat HC:	0.26	0.41	0.34	0.39	1.45				4.03	0.277
Refuel L HC:	0.16	0.22	0.22	0.22	0.36					0.158
Runing L HC:	0.13	0.16	0.16	0.16	0.25					0.123
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.072
Exhaust CO:	8.07	14.44	13.33	14.09	27.90	0.79	0.94	5.35	10.74	8.548
Exhaust NOX:	1.50	2.12	2.06	2.10	6.18	1.52	1.83	12.45	1.06	2.398

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	27.0	27.0	27.0		27.0	27.0	27.0	27.0	27.0	
VMT Mix:	0.818	0.070	0.033		0.012	0.005	0.001	0.057	0.004	
ZEV Fract:	0.00 %	0.00 %								

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.77	2.67	2.52	2.62	4.23	0.55	0.84	1.75	6.76	1.898
Exhaust HC:	0.95	1.66	1.58	1.63	1.82	0.55	0.84	1.75	2.17	1.079
Evaporat HC:	0.26	0.41	0.34	0.39	1.45				4.03	0.286
Refuel L HC:	0.16	0.22	0.22	0.22	0.36					0.162
Runing L HC:	0.32	0.30	0.31	0.30	0.51					0.297
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.074
Exhaust CO:	12.49	20.67	19.28	20.22	39.05	1.20	1.41	8.07	19.12	13.311
Exhaust NOX:	1.44	1.99	1.95	1.98	5.34	1.41	1.70	11.57	0.89	2.114

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN MIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	30.0	30.0	30.0		30.0	30.0	30.0	30.0	30.0	
VMT Mix:	0.851	0.060	0.029		0.011	0.005	0.001	0.039	0.004	
ZEV Fract:	0.00 %	0.00 %								

0Composite Emission Factors (Gm/Mile)

VOC HC:	1.65	2.51	2.37	2.47	3.92	0.50	0.77	1.60	6.60	1.762
Exhaust HC:	0.87	1.53	1.46	1.51	1.57	0.50	0.77	1.60	2.01	0.967
Evaporat HC:	0.26	0.41	0.34	0.39	1.45				4.03	0.288
Refuel L HC:	0.16	0.22	0.22	0.22	0.36					0.164
Runing L HC:	0.28	0.27	0.28	0.27	0.45					0.269
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.075
Exhaust CO:	11.40	19.10	17.82	18.68	35.12	1.07	1.27	7.24	16.96	12.110
Exhaust NOX:	1.45	2.02	1.97	2.01	5.47	1.38	1.66	11.31	0.93	1.927

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN COLLECTOR Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	31.0	31.0	31.0		31.0	31.0	31.0	31.0	31.0	

VMT Mix:	0.861	0.062	0.029		0.011	0.005	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.62	2.47	2.33	2.42	3.84	0.49	0.75	1.56	6.55	1.729
Exhaust HC:	0.85	1.49	1.43	1.47	1.50	0.49	0.75	1.56	1.96	0.934
Evaporat HC:	0.26	0.41	0.34	0.39	1.45				4.03	0.291
Refuel L HC:	0.16	0.22	0.22	0.22	0.36					0.166
Runing L HC:	0.27	0.26	0.27	0.26	0.44					0.262
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.076
Exhaust CO:	11.09	18.63	17.39	18.24	34.06	1.04	1.23	7.01	16.32	11.841
Exhaust NOX:	1.46	2.03	1.98	2.02	5.52	1.38	1.65	11.26	0.95	1.813

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	33.0	33.0	33.0		33.0	33.0	33.0	33.0	33.0	
VMT Mix:	0.819	0.077	0.037		0.013	0.005	0.001	0.044	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.56	2.38	2.24	2.34	3.68	0.47	0.71	1.48	6.46	1.683
Exhaust HC:	0.81	1.43	1.36	1.40	1.37	0.47	0.71	1.48	1.87	0.914
Evaporat HC:	0.26	0.41	0.34	0.39	1.45				4.03	0.292
Refuel L HC:	0.16	0.22	0.22	0.22	0.36					0.165
Runing L HC:	0.25	0.24	0.25	0.25	0.41					0.238
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.075
Exhaust CO:	10.51	17.80	16.61	17.41	32.23	0.98	1.16	6.60	15.16	11.371
Exhaust NOX:	1.46	2.05	1.99	2.03	5.60	1.37	1.65	11.20	0.97	2.008

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL INTERSTATE Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh

```
+
 Veh. Speeds:      56.0      56.0      56.0                56.0      56.0      56.0      56.0      56.0
     VMT Mix:      0.725     0.063     0.030               0.011     0.005     0.001     0.161     0.004
   ZEV Fract:      0.00 %    0.00 %
0Composite Emission Factors (Gm/Mile)
 VOC       HC:     1.23      2.01      1.87      1.96      2.88      0.32      0.49      1.03      6.21     1.296
 Exhaust   HC:     0.64      1.19      1.13      1.17      0.81      0.32      0.49      1.03      1.62     0.755
 Evaporat  HC:     0.26      0.41      0.34      0.39      1.45                                  4.03     0.257
 Refuel L  HC:     0.16      0.22      0.22      0.22      0.36                                           0.144
 Runing L  HC:     0.09      0.11      0.11      0.11      0.17                                           0.074
 Rsting L  HC:     0.08      0.08      0.07      0.08      0.08                                  0.56     0.066
 Exhaust   CO:     8.97     16.79     15.39     16.34     32.15      0.83      0.99      5.62     12.92    9.340
 Exhaust  NOX:     1.95      2.82      2.75      2.80      6.62      1.94      2.33     15.89      1.36    4.326
```

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0RURAL PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

```
0  Veh. Type:      LDGV      LDGT1     LDGT2      LDGT      HDGV      LDDV      LDDT      HDDV      MC     All Veh
+
 Veh. Speeds:      53.0      53.0      53.0                53.0      53.0      53.0      53.0      53.0
     VMT Mix:      0.774     0.079     0.037               0.014     0.005     0.001     0.086     0.004
   ZEV Fract:      0.00 %    0.00 %
0Composite Emission Factors (Gm/Mile)
 VOC       HC:     1.20      1.95      1.82      1.91      2.92      0.33      0.50      1.05      6.10     1.312
 Exhaust   HC:     0.61      1.12      1.07      1.10      0.82      0.33      0.50      1.05      1.51     0.709
 Evaporat  HC:     0.26      0.41      0.34      0.39      1.45                                  4.03     0.283
 Refuel L  HC:     0.16      0.22      0.22      0.22      0.36                                           0.158
 Runing L  HC:     0.10      0.12      0.12      0.12      0.19                                           0.090
 Rsting L  HC:     0.08      0.08      0.07      0.08      0.08                                  0.56     0.071
 Exhaust   CO:     7.82     14.14     13.01     13.78     30.11      0.81      0.95      5.43     10.42    8.589
 Exhaust  NOX:     1.79      2.56      2.49      2.54      6.49      1.78      2.14     14.55      1.25    3.036
```

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0RURAL MINOR ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.791	0.087	0.041		0.015	0.005	0.001	0.056	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.36	2.13	1.99	2.08	3.24	0.39	0.59	1.23	6.20	1.484
Exhaust HC:	0.68	1.23	1.17	1.21	1.03	0.39	0.59	1.23	1.61	0.787
Evaporat HC:	0.26	0.41	0.34	0.39	1.45				4.03	0.293
Refuel L HC:	0.16	0.22	0.22	0.22	0.36					0.164
Runing L HC:	0.17	0.19	0.19	0.19	0.30					0.166
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.074
Exhaust CO:	8.80	15.38	14.30	15.03	28.22	0.83	0.98	5.60	11.87	9.676
Exhaust NOX:	1.49	2.09	2.03	2.08	5.96	1.42	1.71	11.62	1.03	2.197

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MAJ COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.812	0.078	0.037		0.014	0.005	0.001	0.049	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.29	2.06	1.92	2.01	3.13	0.37	0.56	1.17	6.14	1.411
Exhaust HC:	0.65	1.18	1.12	1.16	0.95	0.37	0.56	1.17	1.55	0.738
Evaporat HC:	0.26	0.41	0.34	0.39	1.45				4.03	0.292
Refuel L HC:	0.16	0.22	0.22	0.22	0.36					0.164
Runing L HC:	0.15	0.17	0.17	0.17	0.27					0.143
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.074
Exhaust CO:	8.34	14.77	13.69	14.42	27.84	0.80	0.95	5.42	11.13	9.134
Exhaust NOX:	1.50	2.11	2.05	2.09	6.09	1.47	1.77	12.06	1.05	2.146

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.

Reformulated Gas: No

0RURAL MIN COL

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.821	0.080	0.038		0.014	0.005	0.001	0.037	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.29	2.06	1.92	2.01	3.13	0.37	0.56	1.17	6.14	1.415
Exhaust HC:	0.65	1.18	1.12	1.16	0.95	0.37	0.56	1.17	1.55	0.733
Evaporat HC:	0.26	0.41	0.34	0.39	1.45				4.03	0.296
Refuel L HC:	0.16	0.22	0.22	0.22	0.36					0.166
Runing L HC:	0.15	0.17	0.17	0.17	0.27					0.145
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.075
Exhaust CO:	8.34	14.77	13.69	14.42	27.84	0.80	0.95	5.42	11.13	9.188
Exhaust NOX:	1.50	2.11	2.05	2.09	6.09	1.47	1.77	12.06	1.05	2.021

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 1994 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL LOCAL

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.875	0.054	0.025		0.009	0.005	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.29	2.06	1.92	2.01	3.13	0.37	0.56	1.17	6.14	1.379
Exhaust HC:	0.65	1.18	1.12	1.16	0.95	0.37	0.56	1.17	1.55	0.706
Evaporat HC:	0.26	0.41	0.34	0.39	1.45				4.03	0.287
Refuel L HC:	0.16	0.22	0.22	0.22	0.36					0.165
Runing L HC:	0.15	0.17	0.17	0.17	0.27					0.145
Rsting L HC:	0.08	0.08	0.07	0.08	0.08				0.56	0.076
Exhaust CO:	8.34	14.77	13.69	14.43	27.84	0.80	0.95	5.42	11.13	8.883
Exhaust NOX:	1.50	2.11	2.05	2.09	6.09	1.47	1.77	12.06	1.05	1.869

1JULY, 2004-NO I/M-(Greensboro ,DMV AGE,HDDV NOX CREDIT,NLEV,TDM SPEEDS 05-06-99)
MOBILE5a (26-Mar-93)
0 Emission Factor Modification Profile
+

0Equation	Reg	Veh	Pol	First MY	Last MY	Base	DR	Altered
1	1	7	3	1990	1990	11.65	0.00	Yes
2	1	7	3	1991	1997	9.37	0.00	Yes
3	1	7	3	1998	2003	7.49	0.00	Yes
4	1	7	3	2004	2020	3.75	0.00	Yes

0VOC HC emission factors include evaporative HC emission factors.
0

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0URBAN INTERSTATE Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	42.0	42.0	42.0		42.0	42.0	42.0	42.0	42.0	
VMT Mix:	0.766	0.062	0.028		0.010	0.003	0.001	0.126	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.18	1.80	1.74	1.78	2.45	0.26	0.39	1.13	6.87	1.256
Exhaust HC:	0.52	0.91	0.94	0.92	0.63	0.26	0.39	1.13	1.35	0.638
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.242
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.172
Runing L HC:	0.19	0.24	0.24	0.24	0.29					0.172
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.031
Exhaust CO:	6.03	10.18	10.48	10.28	12.70	0.68	0.79	5.26	11.59	6.385
Exhaust NOX:	1.12	1.58	1.71	1.62	4.61	1.00	1.16	7.13	1.04	1.959

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0URBAN FREEWAY Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	47.0	47.0	47.0		47.0	47.0	47.0	47.0	47.0	
VMT Mix:	0.824	0.060	0.026		0.009	0.003	0.001	0.073	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.09	1.70	1.64	1.68	2.34	0.24	0.36	1.04	6.81	1.169
Exhaust HC:	0.47	0.84	0.87	0.85	0.56	0.24	0.36	1.04	1.29	0.551
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.253
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.181
Runing L HC:	0.16	0.21	0.21	0.21	0.24					0.151
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.033
Exhaust CO:	5.13	8.98	9.23	9.06	12.69	0.66	0.76	5.08	10.57	5.536
Exhaust NOX:	1.13	1.59	1.71	1.62	4.78	1.08	1.26	7.70	1.07	1.684

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	28.0	28.0	28.0		28.0	28.0	28.0	28.0	28.0	
VMT Mix:	0.820	0.072	0.032		0.011	0.003	0.001	0.057	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.54	2.26	2.21	2.24	3.09	0.37	0.55	1.58	7.32	1.651
Exhaust HC:	0.76	1.24	1.29	1.26	1.08	0.37	0.55	1.58	1.80	0.862
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.260
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.186
Runing L HC:	0.32	0.37	0.37	0.37	0.47					0.308
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	10.28	15.83	16.34	15.99	17.04	0.96	1.11	7.39	18.36	10.777
Exhaust NOX:	1.09	1.57	1.69	1.61	4.14	0.97	1.14	6.96	0.90	1.510

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN MIN ART

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	31.0	31.0	31.0		31.0	31.0	31.0	31.0	31.0	
VMT Mix:	0.853	0.062	0.028		0.010	0.003	0.001	0.039	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.44	2.12	2.08	2.11	2.89	0.34	0.50	1.45	7.18	1.532
Exhaust HC:	0.69	1.15	1.19	1.16	0.93	0.34	0.50	1.45	1.67	0.766
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.263
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.188
Runing L HC:	0.29	0.33	0.33	0.33	0.42					0.280
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	9.05	14.19	14.64	14.33	15.43	0.87	1.00	6.67	16.32	9.489
Exhaust NOX:	1.10	1.57	1.70	1.61	4.24	0.96	1.12	6.84	0.95	1.399

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN COLLECTOR

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	32.0	32.0	32.0		32.0	32.0	32.0	32.0	32.0	
VMT Mix:	0.863	0.064	0.028		0.010	0.003	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.41	2.08	2.04	2.07	2.84	0.33	0.49	1.41	7.14	1.502
Exhaust HC:	0.67	1.12	1.16	1.13	0.89	0.33	0.49	1.41	1.63	0.737
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.266
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.191
Runing L HC:	0.28	0.32	0.32	0.32	0.41					0.274
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.035
Exhaust CO:	8.69	13.72	14.14	13.85	14.99	0.84	0.97	6.46	15.72	9.161
Exhaust NOX:	1.10	1.57	1.70	1.61	4.27	0.95	1.11	6.82	0.96	1.333

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low

Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	34.0	34.0	34.0		34.0	34.0	34.0	34.0	34.0	
VMT Mix:	0.820	0.080	0.035		0.013	0.003	0.001	0.044	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.35	2.01	1.97	2.00	2.74	0.31	0.46	1.34	7.07	1.462
Exhaust HC:	0.63	1.07	1.11	1.08	0.82	0.31	0.46	1.34	1.55	0.721
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.266
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.190
Runing L HC:	0.26	0.30	0.30	0.30	0.38					0.252
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	8.03	12.84	13.24	12.96	14.25	0.79	0.92	6.11	14.63	8.592
Exhaust NOX:	1.11	1.57	1.70	1.61	4.34	0.95	1.11	6.80	0.98	1.456

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL INTERSTATE Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	56.0	56.0	56.0		56.0	56.0	56.0	56.0	56.0	
VMT Mix:	0.728	0.065	0.029		0.010	0.002	0.001	0.161	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.05	1.65	1.60	1.63	2.21	0.22	0.33	0.95	6.89	1.125
Exhaust HC:	0.48	0.86	0.89	0.87	0.50	0.22	0.33	0.95	1.38	0.597
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.234
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.166
Runing L HC:	0.11	0.15	0.15	0.15	0.17					0.098
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.030
Exhaust CO:	5.46	9.67	9.93	9.75	14.57	0.69	0.81	5.35	12.92	5.955
Exhaust NOX:	1.40	2.07	2.23	2.12	5.09	1.35	1.58	9.65	1.36	2.832

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits

0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	53.0	53.0	53.0		53.0	53.0	53.0	53.0	53.0	
VMT Mix:	0.776	0.081	0.036		0.013	0.003	0.001	0.086	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.05	1.64	1.59	1.62	2.24	0.23	0.34	0.97	6.80	1.146
Exhaust HC:	0.47	0.83	0.86	0.84	0.51	0.23	0.34	0.97	1.29	0.555
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.256
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.182
Runing L HC:	0.13	0.17	0.17	0.17	0.19					0.120
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.033
Exhaust CO:	4.97	8.77	9.01	8.85	13.64	0.67	0.78	5.17	10.42	5.560
Exhaust NOX:	1.30	1.89	2.04	1.93	4.99	1.24	1.44	8.83	1.25	2.069

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MINOR ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.792	0.090	0.040		0.014	0.003	0.001	0.056	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.19	1.82	1.77	1.80	2.48	0.27	0.40	1.15	6.88	1.308
Exhaust HC:	0.53	0.93	0.96	0.94	0.64	0.27	0.40	1.15	1.37	0.625
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.265
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.188
Runing L HC:	0.20	0.25	0.25	0.25	0.30					0.195
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	6.24	10.46	10.77	10.55	12.79	0.69	0.80	5.32	11.87	6.842
Exhaust NOX:	1.12	1.58	1.71	1.62	4.58	0.99	1.15	7.05	1.03	1.566

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MAJ COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	43.0	43.0	43.0		43.0	43.0	43.0	43.0	43.0	
VMT Mix:	0.815	0.080	0.035		0.013	0.003	0.001	0.049	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.16	1.77	1.72	1.76	2.43	0.26	0.38	1.11	6.85	1.260
Exhaust HC:	0.51	0.90	0.93	0.91	0.61	0.26	0.38	1.11	1.33	0.591
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.265
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.189
Runing L HC:	0.19	0.24	0.23	0.23	0.28					0.182
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	5.84	9.92	10.21	10.01	12.64	0.68	0.78	5.20	11.35	6.374
Exhaust NOX:	1.12	1.58	1.71	1.62	4.65	1.01	1.18	7.22	1.05	1.525

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MIN COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.824	0.082	0.036		0.013	0.003	0.001	0.037	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.14	1.75	1.70	1.74	2.40	0.25	0.38	1.09	6.84	1.245
Exhaust HC:	0.50	0.88	0.91	0.89	0.59	0.25	0.38	1.09	1.32	0.573
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.268
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.191
Runing L HC:	0.18	0.23	0.23	0.23	0.27					0.178
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	5.65	9.67	9.95	9.75	12.62	0.67	0.78	5.16	11.13	6.206

Exhaust NOX:	1.13	1.58	1.71	1.62	4.68	1.02	1.20	7.32	1.05	1.459

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.877	0.055	0.024		0.009	0.003	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.14	1.75	1.70	1.74	2.40	0.25	0.38	1.09	6.84	1.217
Exhaust HC:	0.50	0.88	0.91	0.89	0.59	0.25	0.38	1.09	1.32	0.552
Evaporat HC:	0.24	0.35	0.27	0.32	1.09				4.96	0.264
Refuel L HC:	0.19	0.25	0.26	0.25	0.41					0.190
Runing L HC:	0.18	0.23	0.23	0.23	0.27					0.177
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	5.65	9.67	9.95	9.75	12.62	0.67	0.78	5.16	11.13	6.023
Exhaust NOX:	1.13	1.58	1.71	1.62	4.68	1.02	1.20	7.32	1.05	1.363

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1JULY, 2004-I/M-(Greensboro ,DMV AGE,HDDV NOX CREDIT,NLEV,TDM SPEEDS 05-06-99)
 MOBILE5a (26-Mar-93)
0              Emission Factor Modification Profile
+
0Equation  Reg  Veh  Pol  First MY  Last MY    Base     DR          Altered
+
     1      1    7    3    1990      1990     11.65    0.00          Yes
     2      1    7    3    1991      1997      9.37    0.00          Yes
     3      1    7    3    1998      2003      7.49    0.00          Yes
     4      1    7    3    2004      2020      3.75    0.00          Yes
0I/M program selected:

0    Start year (January 1):              1991
     Pre-1981 MYR stringency rate:         20%
     First model year covered:            1975
     Last model year covered:             2020
     Waiver rate (pre-1981):               5.%
     Waiver rate (1981 and newer):         5.%
     Compliance Rate:                     98.%
     Inspection type:                     Computerized Test and Repair
     Inspection frequency                 Annual
     Vehicle types covered:               LDGV - Yes
                                         LDGT1 - Yes
                                         LDGT2 - Yes
                                          HDGV - Yes
     1981 & later MYR test type:          Idle
     Cutpoints, HC:  220.000   CO:    1.200   NOx:  999.000
0Functional Check Program Description:
0Check Start   Model Yrs  Vehicle Classes Covered        Inspection        Comp
       (Jan1)  Covered    LDGV   LDGT1  LDGT2  HDGV    Type      Freq      Rate

 ATP   1991    1975-2020  Yes    Yes    Yes    Yes Test & Repair Annual    98.0%
0Air pump system disablements:       Yes  Catalyst removals:                  Yes
 Fuel inlet restrictor disablements: Yes  Tailpipe lead deposit test:         No
 EGR disablement:                    Yes  Evaporative system disablements:    Yes
 PCV system disablements:            Yes  Missing gas caps:                   Yes
0VOC HC emission factors include evaporative HC emission factors.
0
0Emission factors are as of July 1st of the indicated calendar year.
 LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied  basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004        I/M Program: Yes       Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
```

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN INTERSTATE Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	42.0	42.0	42.0		42.0	42.0	42.0	42.0	42.0	
VMT Mix:	0.766	0.062	0.028		0.010	0.003	0.001	0.126	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.92	1.34	1.32	1.34	1.79	0.26	0.39	1.13	5.94	1.009
Exhaust HC:	0.46	0.74	0.78	0.75	0.53	0.26	0.39	1.13	1.35	0.574
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.157
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.148
Runing L HC:	0.11	0.13	0.13	0.13	0.16					0.098
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.031
Exhaust CO:	5.19	8.30	8.60	8.39	10.15	0.68	0.79	5.26	11.59	5.542
Exhaust NOX:	1.08	1.44	1.59	1.49	4.70	1.00	1.16	7.13	1.04	1.912

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN FREEWAY Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	47.0	47.0	47.0		47.0	47.0	47.0	47.0	47.0	
VMT Mix:	0.824	0.060	0.026		0.009	0.003	0.001	0.073	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.85	1.27	1.24	1.26	1.71	0.24	0.36	1.04	5.88	0.928
Exhaust HC:	0.42	0.68	0.72	0.69	0.47	0.24	0.36	1.04	1.29	0.489
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.165
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.157
Runing L HC:	0.09	0.11	0.11	0.11	0.13					0.085
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.033
Exhaust CO:	4.41	7.31	7.57	7.39	10.15	0.66	0.76	5.08	10.57	4.775
Exhaust NOX:	1.08	1.45	1.59	1.49	4.87	1.08	1.26	7.70	1.07	1.635

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits

0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	28.0	28.0	28.0		28.0	28.0	28.0	28.0	28.0	
VMT Mix:	0.820	0.072	0.032		0.011	0.003	0.001	0.057	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.20	1.69	1.68	1.68	2.28	0.37	0.55	1.58	6.39	1.302
Exhaust HC:	0.67	1.01	1.06	1.03	0.92	0.37	0.55	1.58	1.80	0.761
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.169
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.161
Runing L HC:	0.19	0.21	0.20	0.20	0.26					0.177
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	8.85	12.94	13.45	13.10	13.62	0.96	1.11	7.39	18.36	9.268
Exhaust NOX:	1.04	1.43	1.57	1.47	4.21	0.97	1.14	6.96	0.90	1.460

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN MIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	31.0	31.0	31.0		31.0	31.0	31.0	31.0	31.0	
VMT Mix:	0.853	0.062	0.028		0.010	0.003	0.001	0.039	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.12	1.59	1.58	1.58	2.13	0.34	0.50	1.45	6.26	1.203
Exhaust HC:	0.61	0.93	0.98	0.95	0.79	0.34	0.50	1.45	1.67	0.675
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.170
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.163
Runing L HC:	0.17	0.18	0.18	0.18	0.23					0.161
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	7.79	11.59	12.04	11.73	12.34	0.87	1.00	6.67	16.32	8.150
Exhaust NOX:	1.05	1.43	1.58	1.48	4.32	0.96	1.12	6.84	0.95	1.349

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN COLLECTOR Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	32.0	32.0	32.0		32.0	32.0	32.0	32.0	32.0	
VMT Mix:	0.863	0.064	0.028		0.010	0.003	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.10	1.56	1.55	1.56	2.09	0.33	0.49	1.41	6.22	1.176
Exhaust HC:	0.59	0.91	0.95	0.92	0.76	0.33	0.49	1.41	1.63	0.646
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.172
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.165
Runing L HC:	0.16	0.18	0.18	0.18	0.22					0.158
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.035
Exhaust CO:	7.48	11.20	11.63	11.33	11.99	0.84	0.97	6.46	15.72	7.856
Exhaust NOX:	1.06	1.43	1.58	1.48	4.35	0.95	1.11	6.82	0.96	1.283

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	34.0	34.0	34.0		34.0	34.0	34.0	34.0	34.0	
VMT Mix:	0.820	0.080	0.035		0.013	0.003	0.001	0.044	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.05	1.51	1.49	1.50	2.01	0.31	0.46	1.34	6.14	1.148
Exhaust HC:	0.56	0.87	0.91	0.88	0.70	0.31	0.46	1.34	1.55	0.633
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.172
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.164
Runing L HC:	0.15	0.17	0.16	0.17	0.21					0.144
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	6.91	10.48	10.88	10.60	11.39	0.79	0.92	6.11	14.63	7.366

Exhaust NOX:	1.06	1.43	1.58	1.48	4.42	0.95	1.11	6.80	0.98	1.405

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0RURAL INTERSTATE Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	56.0	56.0	56.0		56.0	56.0	56.0	56.0	56.0	
VMT Mix:	0.728	0.065	0.029		0.010	0.002	0.001	0.161	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.84	1.25	1.23	1.24	1.63	0.22	0.33	0.95	5.97	0.920
Exhaust HC:	0.42	0.70	0.73	0.71	0.43	0.22	0.33	0.95	1.38	0.539
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.152
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.143
Runing L HC:	0.06	0.08	0.08	0.08	0.09					0.055
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.030
Exhaust CO:	4.69	7.86	8.13	7.94	11.65	0.69	0.81	5.35	12.92	5.195
Exhaust NOX:	1.34	1.88	2.07	1.94	5.18	1.35	1.58	9.65	1.36	2.775

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0RURAL PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	53.0	53.0	53.0		53.0	53.0	53.0	53.0	53.0	
VMT Mix:	0.776	0.081	0.036		0.013	0.003	0.001	0.086	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.83	1.24	1.21	1.23	1.64	0.23	0.34	0.97	5.87	0.916
Exhaust HC:	0.41	0.67	0.71	0.68	0.44	0.23	0.34	0.97	1.29	0.493
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.166
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.157
Runing L HC:	0.07	0.09	0.09	0.09	0.10					0.067

Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.033
Exhaust CO:	4.27	7.14	7.39	7.22	10.91	0.67	0.78	5.17	10.42	4.790
Exhaust NOX:	1.25	1.72	1.89	1.77	5.08	1.24	1.44	8.83	1.25	2.010

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MINOR ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.792	0.090	0.040		0.014	0.003	0.001	0.056	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.93	1.36	1.34	1.35	1.81	0.27	0.40	1.15	5.96	1.030
Exhaust HC:	0.47	0.75	0.79	0.77	0.55	0.27	0.40	1.15	1.37	0.550
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.172
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.163
Runing L HC:	0.12	0.13	0.13	0.13	0.16					0.111
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	5.37	8.53	8.84	8.62	10.22	0.69	0.80	5.32	11.87	5.863
Exhaust NOX:	1.07	1.44	1.59	1.49	4.66	0.99	1.15	7.05	1.03	1.513

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MAJ COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	43.0	43.0	43.0		43.0	43.0	43.0	43.0	43.0	
VMT Mix:	0.815	0.080	0.035		0.013	0.003	0.001	0.049	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.91	1.33	1.30	1.32	1.77	0.26	0.38	1.11	5.92	0.991
Exhaust HC:	0.45	0.73	0.76	0.74	0.52	0.26	0.38	1.11	1.33	0.520
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.172

Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.163
Runing L HC:	0.11	0.13	0.12	0.13	0.15					0.103
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	5.02	8.08	8.38	8.17	10.11	0.68	0.78	5.20	11.35	5.464
Exhaust NOX:	1.08	1.44	1.59	1.49	4.73	1.01	1.18	7.22	1.05	1.473

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MIN COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.824	0.082	0.036		0.013	0.003	0.001	0.037	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.89	1.31	1.29	1.30	1.76	0.25	0.38	1.09	5.91	0.976
Exhaust HC:	0.44	0.72	0.75	0.73	0.51	0.25	0.38	1.09	1.32	0.503
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.174
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.165
Runing L HC:	0.10	0.12	0.12	0.12	0.14					0.101
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	4.85	7.88	8.16	7.96	10.09	0.67	0.78	5.16	11.13	5.309
Exhaust NOX:	1.08	1.44	1.59	1.49	4.77	1.02	1.20	7.32	1.05	1.406

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2004 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.877	0.055	0.024		0.009	0.003	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.89	1.31	1.29	1.30	1.76	0.25	0.38	1.09	5.91	0.955

Exhaust HC:	0.44	0.72	0.75	0.73	0.51	0.25	0.38	1.09	1.32	0.485
Evaporat HC:	0.15	0.21	0.16	0.19	0.71				4.03	0.171
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.164
Runing L HC:	0.10	0.12	0.12	0.12	0.14					0.101
Rsting L HC:	0.03	0.04	0.03	0.04	0.04				0.56	0.034
Exhaust CO:	4.85	7.88	8.16	7.96	10.09	0.67	0.78	5.16	11.13	5.164
Exhaust NOX:	1.08	1.44	1.59	1.49	4.77	1.02	1.20	7.32	1.05	1.313

1JULY, 2014-NO I/M-(GREENSBORO,DMV AGE,HDDV NOX CREDIT,NLEV,TDM SPEEDS 05-06-99)
MOBILE5a (26-Mar-93)
0 Emission Factor Modification Profile
+

0Equation	Reg	Veh	Pol	First MY	Last MY	Base	DR	Altered
1	1	7	3	1990	1990	11.65	0.00	Yes
2	1	7	3	1991	1997	9.37	0.00	Yes
3	1	7	3	1998	2003	7.49	0.00	Yes
4	1	7	3	2004	2020	3.75	0.00	Yes

0VOC HC emission factors include evaporative HC emission factors.
0

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0URBAN INTERSTATE Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.767	0.062	0.027		0.010	0.003	0.001	0.126	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.07	1.60	1.62	1.61	2.10	0.26	0.39	1.14	6.88	1.154
Exhaust HC:	0.49	0.84	0.91	0.87	0.60	0.26	0.39	1.14	1.37	0.610
Evaporat HC:	0.20	0.28	0.22	0.26	0.84				4.96	0.207
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.172
Runing L HC:	0.17	0.21	0.21	0.21	0.23					0.148
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	5.65	9.17	10.00	9.42	10.64	0.69	0.79	5.31	11.87	6.001
Exhaust NOX:	1.03	1.44	1.64	1.50	4.19	0.95	1.11	3.63	1.03	1.433

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0URBAN FREEWAY Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh

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+
 Veh. Speeds:      47.0      47.0      47.0                47.0      47.0      47.0      47.0      47.0
     VMT Mix:      0.824     0.059     0.026               0.010     0.003     0.001     0.073     0.004
   ZEV Fract:      0.00 %    0.00 %
0Composite Emission Factors (Gm/Mile)
 VOC       HC:     0.98      1.49      1.50      1.50      1.98      0.24      0.36      1.04      6.81     1.056
 Exhaust   HC:     0.43      0.76      0.83      0.78      0.52      0.24      0.36      1.04      1.29     0.510
 Evaporat HC:      0.20      0.28      0.22      0.26      0.84                                  4.96     0.217
 Refuel L HC:      0.19      0.25      0.26      0.26      0.41                                           0.181
 Runing L HC:      0.14      0.18      0.18      0.18      0.19                                           0.129
 Rsting L HC:      0.02      0.02      0.02      0.02      0.02                                  0.56     0.019
 Exhaust   CO:     4.57      7.69      8.39      7.91     10.56      0.66      0.76      5.07     10.57    4.957
 Exhaust NOX:      1.04      1.44      1.65      1.51      4.38      1.03      1.21      3.96      1.07    1.327
-----------------------------------------------------------------------------------------------------------------
0Emission factors are as of July 1st of the indicated calendar year.
 LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied  basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014          I/M Program: No        Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
                   Anti-tam. Program: No      Operating Mode: 20.6 / 27.3 / 20.6   Altitude:  500. Ft.
                    Reformulated Gas: No
0URBAN PRIN ART                                Minimum Temp:  68. (F)         Maximum Temp:  94. (F)
                       Period 1 RVP:  9.0      Period 2 RVP:  9.0        Period 2 Start Yr: 1992
0  Veh. Type:       LDGV      LDGT1     LDGT2      LDGT      HDGV      LDDV      LDDT      HDDV      MC     All Veh
+
 Veh. Speeds:      27.0      27.0      27.0                27.0      27.0      27.0      27.0      27.0
     VMT Mix:      0.821     0.071     0.031               0.012     0.003     0.001     0.057     0.004
   ZEV Fract:      0.00 %    0.00 %
0Composite Emission Factors (Gm/Mile)
 VOC       HC:     1.40      2.05      2.09      2.06      2.70      0.38      0.56      1.63      7.37     1.519
 Exhaust   HC:     0.72      1.18      1.28      1.21      1.06      0.38      0.56      1.63      1.85     0.832
 Evaporat HC:      0.20      0.28      0.22      0.26      0.84                                  4.96     0.223
 Refuel L HC:      0.19      0.25      0.26      0.26      0.41                                           0.186
 Runing L HC:      0.27      0.32      0.31      0.32      0.37                                           0.259
 Rsting L HC:      0.02      0.02      0.02      0.02      0.02                                  0.56     0.019
 Exhaust   CO:    10.06     15.16     16.54     15.58     14.72      1.00      1.14      7.66     19.12   10.541
 Exhaust NOX:      1.00      1.43      1.63      1.49      3.76      0.94      1.11      3.61      0.89    1.232
-----------------------------------------------------------------------------------------------------------------
0Emission factors are as of July 1st of the indicated calendar year.
 LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied  basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014          I/M Program: No        Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
                   Anti-tam. Program: No      Operating Mode: 20.6 / 27.3 / 20.6   Altitude:  500. Ft.
                    Reformulated Gas: No
0URBAN MIN ART                                 Minimum Temp:  68. (F)         Maximum Temp:  94. (F)
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Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	31.0	31.0	31.0		31.0	31.0	31.0	31.0	31.0	
VMT Mix:	0.854	0.062	0.027		0.010	0.003	0.001	0.039	0:004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.28	1.88	1.91	1.89	2.46	0.33	0.50	1.44	7.18	1.371
Exhaust HC:	0.64	1.05	1.14	1.08	0.87	0.33	0.50	1.44	1.67	0.712
Evaporat HC:	0.20	0.28	0.22	0.26	0.84				4.96	0.224
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.188
Runing L HC:	0.23	0.28	0.27	0.27	0.32					0.228
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	8.39	12.90	14.07	13.25	12.84	0.86	0.99	6.65	16.32	8.804
Exhaust NOX:	1.01	1.44	1.64	1.50	3.88	0.92	1.08	3.51	0.95	1.182

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN COLLECTOR Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	32.0	32.0	32.0		32.0	32.0	32.0	32.0	32.0	
VMT Mix:	0.863	0.064	0.028		0.010	0.003	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.25	1.85	1.87	1.85	2.41	0.33	0.48	1.41	7.14	1.343
Exhaust HC:	0.62	1.02	1.11	1.05	0.83	0.33	0.48	1.41	1.63	0.684
Evaporat HC:	0.20	0.28	0.22	0.26	0.84				4.96	0.227
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.191
Runing L HC:	0.23	0.27	0.27	0.27	0.31					0.223
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.020
Exhaust CO:	8.04	12.42	13.55	12.76	12.47	0.84	0.96	6.45	15.72	8.480
Exhaust NOX:	1.02	1.44	1.64	1.50	3.91	0.92	1.07	3.50	0.96	1.155

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.

Reformulated Gas: No

0URBAN LOCAL — Minimum Temp: 68. (F) — Maximum Temp: 94. (F)

Period 1 RVP: 9.0 — Period 2 RVP: 9.0 — Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	34.0	34.0	34.0		34.0	34.0	34.0	34.0	34.0	
VMT Mix:	0.820	0.079	0.035		0.013	0.003	0.002	0.044	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.20	1.78	1.81	1.79	2.32	0.31	0.46	1.33	7.07	1.309
Exhaust HC:	0.58	0.98	1.06	1.00	0.76	0.31	0.46	1.33	1.55	0.669
Evaporat HC:	0.20	0.28	0.22	0.26	0.84				4.96	0.226
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.189
Runing L HC:	0.21	0.25	0.25	0.25	0.29					0.205
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	7.40	11.55	12.60	11.87	11.86	0.79	0.91	6.10	14.63	7.908
Exhaust NOX:	1.02	1.44	1.64	1.50	3.98	0.91	1.07	3.50	0.98	1.222

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 — I/M Program: No — Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No — Operating Mode: 20.6 / 27.3 / 20.6 — Altitude: 500. Ft.
Reformulated Gas: No

0RURAL INTERSTATE — Minimum Temp: 68. (F) — Maximum Temp: 94. (F)

Period 1 RVP: 9.0 — Period 2 RVP: 9.0 — Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	56.0	56.0	56.0		56.0	56.0	56.0	56.0	56.0	
VMT Mix:	0.730	0.064	0.028		0.010	0.002	0.001	0.161	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.95	1.45	1.46	1.46	1.87	0.22	0.33	0.95	6.89	1.024
Exhaust HC:	0.44	0.77	0.84	0.79	0.47	0.22	0.33	0.95	1.38	0.558
Evaporat HC:	0.20	0.28	0.22	0.26	0.84				4.96	0.200
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.165
Runing L HC:	0.10	0.13	0.13	0.13	0.14					0.084
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.017
Exhaust CO:	4.82	8.09	8.82	8.31	12.12	0.69	0.80	5.33	12.92	5.316
Exhaust NOX:	1.28	1.87	2.14	1.95	4.66	1.30	1.52	4.96	1.36	1.969

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.

0Cal. Year: 2014 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	53.0	53.0	53.0		53.0	53.0	53.0	53.0	53.0	
VMT Mix:	0.776	0.081	0.035		0.013	0.003	0.002	0.086	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.94	1.45	1.45	1.45	1.90	0.22	0.33	0.97	6.80	1.035
Exhaust HC:	0.42	0.75	0.81	0.77	0.48	0.22	0.33	0.97	1.29	0.515
Evaporat HC:	0.20	0.28	0.22	0.26	0.84				4.96	0.218
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.182
Runing L HC:	0.11	0.14	0.14	0.14	0.15					0.102
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	4.41	7.48	8.16	7.69	11.35	0.67	0.77	5.16	10.42	4.954
Exhaust NOX:	1.19	1.71	1.95	1.78	4.57	1.19	1.39	4.54	1.25	1.593

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.

0Cal. Year: 2014 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MINOR ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.792	0.089	0.039		0.015	0.003	0.002	0.056	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.07	1.60	1.62	1.61	2.10	0.26	0.39	1.14	6.88	1.175
Exhaust HC:	0.49	0.84	0.91	0.87	0.60	0.26	0.39	1.14	1.37	0.579
Evaporat HC:	0.20	0.28	0.22	0.26	0.84				4.96	0.226
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.188
Runing L HC:	0.17	0.21	0.21	0.21	0.23					0.162
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	5.65	9.17	10.00	9.42	10.64	0.69	0.79	5.31	11.87	6.192
Exhaust NOX:	1.03	1.44	1.64	1.50	4.19	0.95	1.11	3.63	1.03	1.286

0Emission factors are as of July 1st of the indicated calendar year.

LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MAJ COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.815	0.079	0.035		0.013	0.003	0.002	0.049	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.02	1.55	1.56	1.55	2.03	0.25	0.37	1.09	6.84	1.115
Exhaust HC:	0.46	0.80	0.87	0.82	0.55	0.25	0.37	1.09	1.32	0.535
Evaporat HC:	0.20	0.28	0.22	0.26	0.84				4.96	0.225
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.188
Runing L HC:	0.15	0.19	0.19	0.19	0.21					0.147
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	5.07	8.38	9.14	8.62	10.49	0.67	0.77	5.15	11.13	5.554
Exhaust NOX:	1.04	1.44	1.65	1.51	4.29	0.98	1.15	3.76	1.05	1.267

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MIN COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.824	0.081	0.036		0.013	0.003	0.002	0.037	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.02	1.55	1.56	1.55	2.03	0.25	0.37	1.09	6.84	1.116
Exhaust HC:	0.46	0.80	0.87	0.82	0.55	0.25	0.37	1.09	1.32	0.529
Evaporat HC:	0.20	0.28	0.22	0.26	0.84				4.96	0.228
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.191
Runing L HC:	0.15	0.19	0.19	0.19	0.21					0.149
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	5.07	8.38	9.14	8.62	10.49	0.67	0.77	5.15	11.13	5.564
Exhaust NOX:	1.04	1.44	1.65	1.51	4.29	0.98	1.15	3.76	1.05	1.235

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0RURAL LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.877	0.055	0.024		0.009	0.003	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.02	1.55	1.56	1.55	2.03	0.25	0.37	1.09	6.84	1.092
Exhaust HC:	0.46	0.80	0.87	0.82	0.55	0.25	0.37	1.09	1.32	0.509
Evaporat HC:	0.20	0.28	0.22	0.26	0.84				4.96	0.225
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.190
Runing L HC:	0.15	0.19	0.19	0.19	0.21					0.149
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.020
Exhaust CO:	5.07	8.38	9.14	8.61	10.49	0.67	0.77	5.15	11.13	5.411
Exhaust NOX:	1.04	1.44	1.65	1.50	4.29	0.98	1.15	3.76	1.05	1.177

1JULY, 2014-I/M-(GREENSBORO,DMV AGE,HDDV NOX CREDIT,NLEV,TDM SPEEDS 05-06-99)
MOBILE5a (26-Mar-93)
0 Emission Factor Modification Profile
+

0Equation	Reg	Veh	Pol	First MY	Last MY	Base	DR	Altered
1	1	7	3	1990	1990	11.65	0.00	Yes
2	1	7	3	1991	1997	9.37	0.00	Yes
3	1	7	3	1998	2003	7.49	0.00	Yes
4	1	7	3	2004	2020	3.75	0.00	Yes

0I/M program selected:

0 Start year (January 1): 1991
Pre-1981 MYR stringency rate: 20%
First model year covered: 1975
Last model year covered: 2020
Waiver rate (pre-1981): 5.%
Waiver rate (1981 and newer): 5.%
Compliance Rate: 98.%
Inspection type: Computerized Test and Repair
Inspection frequency Annual
Vehicle types covered: LDGV - Yes
LDGT1 - Yes
LDGT2 - Yes
HDGV - Yes
1981 & later MYR test type: Idle
Cutpoints, HC: 220.000 CO: 1.200 NOx: 999.000

0Functional Check Program Description:

0Check	Start (Jan1)	Model Yrs Covered	Vehicle Classes Covered LDGV	LDGT1	LDGT2	HDGV	Inspection Type	Freq	Comp Rate
ATP	1991	1975-2020	Yes	Yes	Yes	Yes	Test & Repair	Annual	98.0%

0Air pump system disablements: Yes Catalyst removals: Yes
Fuel inlet restrictor disablements: Yes Tailpipe lead deposit test: No
EGR disablement: Yes Evaporative system disablements: Yes
PCV system disablements: Yes Missing gas caps: Yes
0VOC HC emission factors include evaporative HC emission factors.
0

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN INTERSTATE

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.767	0.062	0.027		0.010	0.003	0.001	0.126	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.83	1.19	1.23	1.21	1.54	0.26	0.39	1.14	5.96	0.930
Exhaust HC:	0.43	0.68	0.75	0.70	0.50	0.26	0.39	1.14	1.37	0.546
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.135
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.148
Runing L HC:	0.09	0.11	0.11	0.11	0.12					0.083
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	4.85	7.49	8.28	7.73	8.17	0.69	0.79	5.31	11.87	5.212
Exhaust NOX:	0.99	1.30	1.52	1.37	4.26	0.95	1.11	3.63	1.03	1.387

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN FREEWAY

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	47.0	47.0	47.0		47.0	47.0	47.0	47.0	47.0	
VMT Mix:	0.824	0.059	0.026		0.010	0.003	0.001	0.073	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.76	1.11	1.14	1.12	1.45	0.24	0.36	1.04	5.88	0.840
Exhaust HC:	0.38	0.61	0.68	0.63	0.43	0.24	0.36	1.04	1.29	0.451
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.141
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.157
Runing L HC:	0.08	0.09	0.09	0.09	0.10					0.072
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	3.92	6.28	6.95	6.49	8.11	0.66	0.76	5.07	10.57	4.280
Exhaust NOX:	1.00	1.30	1.52	1.37	4.45	1.03	1.21	3.96	1.07	1.278

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	27.0	27.0	27.0		27.0	27.0	27.0	27.0	27.0	
VMT Mix:	0.821	0.071	0.031		0.012	0.003	0.001	0.057	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.10	1.52	1.59	1.54	2.00	0.38	0.56	1.63	6.44	1.201
Exhaust HC:	0.63	0.95	1.05	0.98	0.89	0.38	0.56	1.63	1.85	0.730
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.145
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.161
Runing L HC:	0.15	0.17	0.17	0.17	0.20					0.147
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	8.64	12.38	13.70	12.78	11.31	1.00	1.14	7.66	19.12	9.047
Exhaust NOX:	0.96	1.29	1.51	1.36	3.82	0.94	1.11	3.61	0.89	1.183

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN MIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	31.0	31.0	31.0		31.0	31.0	31.0	31.0	31.0	
VMT Mix:	0.854	0.062	0.027		0.010	0.003	0.001	0.039	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.00	1.40	1.46	1.42	1.82	0.33	0.50	1.44	6.26	1.079
Exhaust HC:	0.55	0.85	0.94	0.87	0.73	0.33	0.50	1.44	1.67	0.623
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.146
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.163
Runing L HC:	0.13	0.15	0.15	0.15	0.17					0.129
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	7.21	10.53	11.65	10.87	9.86	0.86	0.99	6.65	16.32	7.549
Exhaust NOX:	0.97	1.29	1.52	1.36	3.94	0.92	1.08	3.51	0.95	1.132

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits

0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN COLLECTOR Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	32.0	32.0	32.0		32.0	32.0	32.0	32.0	32.0	
VMT Mix:	0.863	0.064	0.028		0.010	0.003	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.98	1.37	1.43	1.39	1.78	0.33	0.48	1.41	6.22	1.053
Exhaust HC:	0.54	0.82	0.91	0.85	0.70	0.33	0.48	1.41	1.63	0.596
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.147
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.165
Runing L HC:	0.13	0.14	0.14	0.14	0.16					0.126
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.020
Exhaust CO:	6.91	10.14	11.22	10.47	9.58	0.84	0.96	6.45	15.72	7.259
Exhaust NOX:	0.97	1.29	1.52	1.36	3.98	0.92	1.07	3.50	0.96	1.105

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	34.0	34.0	34.0		34.0	34.0	34.0	34.0	34.0	
VMT Mix:	0.820	0.079	0.035		0.013	0.003	0.002	0.044	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.94	1.33	1.38	1.34	1.71	0.31	0.46	1.33	6.14	1.030
Exhaust HC:	0.51	0.79	0.87	0.81	0.64	0.31	0.46	1.33	1.55	0.585
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.147
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.164
Runing L HC:	0.12	0.13	0.13	0.13	0.15					0.116
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	6.36	9.43	10.43	9.74	9.11	0.79	0.91	6.10	14.63	6.772
Exhaust NOX:	0.98	1.30	1.52	1.36	4.04	0.91	1.07	3.50	0.98	1.170

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL INTERSTATE Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	56.0	56.0	56.0		56.0	56.0	56.0	56.0	56.0	
VMT Mix:	0.730	0.064	0.028		0.010	0.002	0.001	0.161	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.75	1.09	1.13	1.10	1.38	0.22	0.33	0.95	5.97	0.839
Exhaust HC:	0.38	0.62	0.69	0.64	0.39	0.22	0.33	0.95	1.38	0.502
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.130
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.143
Runing L HC:	0.05	0.07	0.07	0.07	0.07					0.047
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.017
Exhaust CO:	4.14	6.60	7.31	6.82	9.31	0.69	0.80	5.33	12.92	4.653
Exhaust NOX:	1.22	1.69	1.98	1.77	4.73	1.30	1.52	4.96	1.36	1.913

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	53.0	53.0	53.0		53.0	53.0	53.0	53.0	53.0	
VMT Mix:	0.776	0.081	0.035		0.013	0.003	0.002	0.086	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.74	1.08	1.11	1.09	1.40	0.22	0.33	0.97	5.87	0.828
Exhaust HC:	0.37	0.60	0.67	0.62	0.40	0.22	0.33	0.97	1.29	0.455
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.142
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.157
Runing L HC:	0.06	0.07	0.07	0.07	0.08					0.057
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	3.79	6.11	6.76	6.31	8.72	0.67	0.77	5.16	10.42	4.275

Exhaust NOX:	1.14	1.54	1.81	1.62	4.64	1.19	1.39	4.54	1.25	1.534

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0RURAL MINOR ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.792	0.089	0.039		0.015	0.003	0.002	0.056	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.83	1.19	1.23	1.21	1.54	0.26	0.39	1.14	5.96	0.926
Exhaust HC:	0.43	0.68	0.75	0.70	0.50	0.26	0.39	1.14	1.37	0.507
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.147
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.163
Runing L HC:	0.09	0.11	0.11	0.11	0.12					0.090
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	4.85	7.49	8.28	7.73	8.17	0.69	0.79	5.31	11.87	5.305
Exhaust NOX:	0.99	1.30	1.52	1.37	4.26	0.95	1.11	3.63	1.03	1.233

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0RURAL MAJ COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.815	0.079	0.035		0.013	0.003	0.002	0.049	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.80	1.15	1.18	1.16	1.49	0.25	0.37	1.09	5.91	0.879
Exhaust HC:	0.40	0.64	0.71	0.67	0.46	0.25	0.37	1.09	1.32	0.468
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.146
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.163
Runing L HC:	0.08	0.10	0.10	0.10	0.11					0.082

Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	4.36	6.84	7.57	7.07	8.06	0.67	0.77	5.15	11.13	4.762
Exhaust NOX:	0.99	1.30	1.52	1.37	4.35	0.98	1.15	3.76	1.05	1.215

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MIN COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.824	0.081	0.036		0.013	0.003	0.002	0.037	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.80	1.15	1.18	1.16	1.49	0.25	0.37	1.09	5.91	0.876
Exhaust HC:	0.40	0.64	0.71	0.67	0.46	0.25	0.37	1.09	1.32	0.461
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.148
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.165
Runing L HC:	0.08	0.10	0.10	0.10	0.11					0.083
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.019
Exhaust CO:	4.36	6.84	7.57	7.07	8.06	0.67	0.77	5.15	11.13	4.760
Exhaust NOX:	0.99	1.30	1.52	1.37	4.35	0.98	1.15	3.76	1.05	1.183

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2014 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.877	0.055	0.024		0.009	0.003	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.80	1.15	1.18	1.16	1.49	0.25	0.37	1.09	5.91	0.857
Exhaust HC:	0.40	0.64	0.71	0.66	0.46	0.25	0.37	1.09	1.32	0.444
Evaporat HC:	0.13	0.17	0.13	0.16	0.55				4.03	0.147

Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.164
Runing L HC:	0.08	0.10	0.10	0.10	0.11					0.083
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.020
Exhaust CO:	4.36	6.84	7.57	7.06	8.06	0.67	0.77	5.15	11.13	4.638
Exhaust NOX:	0.99	1.30	1.52	1.37	4.35	0.98	1.15	3.76	1.05	1.127

1JULY, 2020- NO I/M-(GREENSBORO, DMV AGE,HDDV NOX CREDIT,NLEV,TDM SPEEDS 05-06-99
MOBILE5a (26-Mar-93)
0 Emission Factor Modification Profile
+

0Equation	Reg	Veh	Pol	First MY	Last MY	Base	DR	Altered
1	1	7	3	1990	1990	11.65	0.00	Yes
2	1	7	3	1991	1997	9.37	0.00	Yes
3	1	7	3	1998	2003	7.49	0.00	Yes
4	1	7	3	2004	2020	3.75	0.00	Yes

0VOC HC emission factors include evaporative HC emission factors.
0

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0URBAN INTERSTATE Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.767	0.062	0.027		0.010	0.003	0.001	0.126	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.06	1.58	1.60	1.59	2.08	0.27	0.41	1.14	6.88	1.146
Exhaust HC:	0.49	0.84	0.91	0.86	0.60	0.27	0.41	1.14	1.37	0.608
Evaporat HC:	0.20	0.27	0.22	0.26	0.83				4.96	0.204
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.172
Runing L HC:	0.16	0.20	0.20	0.20	0.23					0.146
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.017
Exhaust CO:	5.64	9.11	9.98	9.37	10.64	0.69	0.80	5.31	11.87	5.983
Exhaust NOX:	1.03	1.43	1.64	1.49	4.17	0.95	1.12	3.43	1.03	1.403

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0URBAN FREEWAY Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh

```
+
 Veh. Speeds:      51.0      51.0      51.0                51.0      51.0      51.0      51.0      51.0
     VMT Mix:      0.824     0.059     0.026               0.010     0.003     0.001     0.073     0.004
   ZEV Fract:      0.00 %    0.00 %
0Composite Emission Factors (Gm/Mile)
 VOC       HC:     0.94      1.44      1.45      1.44      1.90      0.23      0.35      0.99      6.80     1.018
 Exhaust   HC:     0.42      0.74      0.81      0.76      0.49      0.23      0.35      0.99      1.29     0.497
 Evaporat HC:      0.20      0.27      0.22      0.26      0.83                                    4.96     0.214
 Refuel L HC:      0.19      0.25      0.26      0.26      0.41                                             0.181
 Runing L HC:      0.11      0.15      0.15      0.15      0.16                                             0.109
 Rsting L HC:      0.02      0.02      0.02      0.02      0.02                                      0.56   0.018
 Exhaust   CO:     4.40      7.43      8.14      7.65     10.98      0.66      0.77      5.09     10.42   4.801
 Exhaust NOX:      1.13      1.59      1.82      1.66      4.47      1.13      1.34      4.07      1.18   1.421
```

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0URBAN PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

```
0  Veh. Type:      LDGV      LDGT1     LDGT2      LDGT      HDGV      LDDV      LDDT      HDDV      MC     All Veh
+
 Veh. Speeds:      26.0      26.0      26.0                26.0      26.0      26.0      26.0      26.0
     VMT Mix:      0.819     0.072     0.031               0.012     0.003     0.002     0.057     0.004
   ZEV Fract:      0.00 %    0.00 %
0Composite Emission Factors (Gm/Mile)
 VOC       HC:     1.43      2.07      2.12      2.09      2.74      0.39      0.59      1.68      7.42     1.546
 Exhaust   HC:     0.75      1.20      1.31      1.24      1.12      0.39      0.59      1.68      1.90     0.858
 Evaporat HC:      0.20      0.27      0.22      0.26      0.83                                    4.96     0.219
 Refuel L HC:      0.19      0.25      0.26      0.26      0.41                                             0.186
 Runing L HC:      0.28      0.32      0.32      0.32      0.38                                             0.265
 Rsting L HC:      0.02      0.02      0.02      0.02      0.02                                      0.56   0.018
 Exhaust   CO:    10.53     15.74     17.24     16.19     15.31      1.04      1.21      7.97     19.93  11.012
 Exhaust NOX:      0.99      1.42      1.63      1.48      3.70      0.96      1.13      3.45      0.87   1.215
```

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0URBAN MIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	31.0	31.0	31.0		31.0	31.0	31.0	31.0	31.0	
VMT Mix:	0.854	0.062	0.027		0.010	0.003	0.001	0.039	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.27	1.86	1.90	1.87	2.43	0.34	0.51	1.44	7.18	1.360
Exhaust HC:	0.63	1.04	1.13	1.07	0.87	0.34	0.51	1.44	1.67	0.709
Evaporat HC:	0.20	0.27	0.22	0.26	0.83				4.96	0.221
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.188
Runing L HC:	0.23	0.27	0.27	0.27	0.31					0.224
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	8.37	12.82	14.04	13.19	12.84	0.87	1.01	6.65	16.32	8.779
Exhaust NOX:	1.01	1.42	1.63	1.49	3.86	0.92	1.09	3.32	0.95	1.169

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN COLLECTOR Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	32.0	32.0	32.0		32.0	32.0	32.0	32.0	32.0	
VMT Mix:	0.863	0.064	0.027		0.010	0.003	0.002	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.24	1.82	1.86	1.83	2.38	0.33	0.50	1.41	7.14	1.331
Exhaust HC:	0.61	1.02	1.11	1.04	0.83	0.33	0.50	1.41	1.63	0.680
Evaporat HC:	0.20	0.27	0.22	0.26	0.83				4.96	0.223
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.190
Runing L HC:	0.22	0.26	0.26	0.26	0.30					0.219
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	8.02	12.34	13.52	12.69	12.47	0.84	0.98	6.45	15.72	8.442
Exhaust NOX:	1.01	1.42	1.63	1.48	3.89	0.92	1.09	3.31	0.96	1.145

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.

Reformulated Gas: No

0URBAN LOCAL

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	34.0	34.0	34.0		34.0	34.0	34.0	34.0	34.0	
VMT Mix:	0.821	0.079	0.034		0.013	0.003	0.002	0.044	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.19	1.76	1.79	1.77	2.30	0.31	0.47	1.33	7.07	1.298
Exhaust HC:	0.58	0.97	1.05	0.99	0.76	0.31	0.47	1.33	1.55	0.666
Evaporat HC:	0.20	0.27	0.22	0.26	0.83				4.96	0.223
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.189
Runing L HC:	0.21	0.24	0.24	0.24	0.28					0.202
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	7.38	11.47	12.57	11.80	11.85	0.79	0.92	6.10	14.63	7.879
Exhaust NOX:	1.02	1.42	1.63	1.49	3.95	0.92	1.08	3.30	0.98	1.207

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL INTERSTATE

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	56.0	56.0	56.0		56.0	56.0	56.0	56.0	56.0	
VMT Mix:	0.727	0.064	0.028		0.011	0.003	0.002	0.161	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.94	1.43	1.45	1.44	1.85	0.22	0.34	0.95	6.89	1.017
Exhaust HC:	0.44	0.76	0.83	0.78	0.47	0.22	0.34	0.95	1.38	0.556
Evaporat HC:	0.20	0.27	0.22	0.26	0.83				4.96	0.197
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.165
Runing L HC:	0.10	0.12	0.12	0.12	0.13					0.082
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.016
Exhaust CO:	4.80	8.03	8.80	8.26	12.12	0.70	0.81	5.33	12.92	5.299
Exhaust NOX:	1.28	1.85	2.13	1.94	4.63	1.30	1.54	4.68	1.36	1.923

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.

0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	53.0	53.0	53.0		53.0	53.0	53.0	53.0	53.0	
VMT Mix:	0.776	0.081	0.035		0.013	0.003	0.002	0.086	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.93	1.43	1.44	1.43	1.88	0.23	0.34	0.97	6.80	1.027
Exhaust HC:	0.42	0.74	0.81	0.76	0.48	0.23	0.34	0.97	1.29	0.513
Evaporat HC:	0.20	0.27	0.22	0.26	0.83				4.96	0.215
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.182
Runing L HC:	0.11	0.14	0.14	0.14	0.15					0.100
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.017
Exhaust CO:	4.40	7.43	8.14	7.65	11.35	0.67	0.78	5.16	10.42	4.938
Exhaust NOX:	1.19	1.69	1.94	1.77	4.54	1.19	1.41	4.29	1.25	1.565

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.

0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MINOR ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.792	0.090	0.038		0.015	0.003	0.002	0.056	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.06	1.58	1.60	1.59	2.08	0.27	0.41	1.14	6.88	1.165
Exhaust HC:	0.49	0.84	0.91	0.86	0.60	0.27	0.41	1.14	1.37	0.577
Evaporat HC:	0.20	0.27	0.22	0.26	0.83				4.96	0.223
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.188
Runing L HC:	0.16	0.20	0.20	0.20	0.23					0.159
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	5.64	9.11	9.98	9.37	10.64	0.69	0.80	5.31	11.87	6.171
Exhaust NOX:	1.03	1.43	1.64	1.49	4.17	0.95	1.12	3.43	1.03	1.269

0Emission factors are as of July 1st of the indicated calendar year.

LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MAJ COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.816	0.079	0.034		0.013	0.003	0.002	0.049	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.01	1.52	1.54	1.53	2.01	0.25	0.38	1.09	6.84	1.106
Exhaust HC:	0.46	0.79	0.86	0.81	0.55	0.25	0.38	1.09	1.32	0.533
Evaporat HC:	0.20	0.27	0.22	0.26	0.83				4.96	0.222
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.188
Runing L HC:	0.15	0.19	0.19	0.19	0.21					0.145
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	5.06	8.32	9.12	8.56	10.49	0.67	0.78	5.15	11.13	5.532
Exhaust NOX:	1.03	1.43	1.64	1.49	4.26	0.99	1.17	3.55	1.05	1.250

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MIN COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.825	0.081	0.035		0.013	0.003	0.002	0.037	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.01	1.52	1.54	1.53	2.01	0.25	0.38	1.09	6.84	1.106
Exhaust HC:	0.46	0.79	0.86	0.81	0.55	0.25	0.38	1.09	1.32	0.526
Evaporat HC:	0.20	0.27	0.22	0.26	0.83				4.96	0.224
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.191
Runing L HC:	0.15	0.19	0.19	0.19	0.21					0.147
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	5.06	8.32	9.12	8.56	10.49	0.67	0.78	5.15	11.13	5.541
Exhaust NOX:	1.03	1.43	1.64	1.49	4.26	0.99	1.17	3.55	1.05	1.222

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: No Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: No Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 9.0 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.877	0.055	0.024		0.009	0.003	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.01	1.52	1.54	1.53	2.01	0.25	0.38	1.09	6.84	1.083
Exhaust HC:	0.46	0.79	0.86	0.81	0.55	0.25	0.38	1.09	1.32	0.506
Evaporat HC:	0.20	0.27	0.22	0.26	0.83				4.96	0.222
Refuel L HC:	0.19	0.25	0.26	0.26	0.41					0.190
Runing L HC:	0.15	0.19	0.19	0.19	0.21					0.147
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	5.06	8.32	9.12	8.57	10.49	0.67	0.78	5.15	11.13	5.393
Exhaust NOX:	1.03	1.43	1.64	1.49	4.26	0.99	1.17	3.55	1.05	1.166

```
1JULY, 2020-I/M-(GREENSBORO, DMV AGE,HDDV NOX CREDIT,NLEV,TDM SPEEDS 05-06-99)
 MOBILE5a (26-Mar-93)
0              Emission Factor Modification Profile
+
0Equation  Reg  Veh  Pol  First MY  Last MY    Base     DR          Altered
+
     1      1    7    3    1990      1990      11.65    0.00          Yes
     2      1    7    3    1991      1997       9.37    0.00          Yes
     3      1    7    3    1998      2003       7.49    0.00          Yes
     4      1    7    3    2004      2020       3.75    0.00          Yes
0I/M program selected:

0    Start year (January 1):            1991
     Pre-1981 MYR stringency rate:       20%
     First model year covered:          1975
     Last model year covered:           2020
     Waiver rate (pre-1981):             5.%
     Waiver rate (1981 and newer):       5.%
     Compliance Rate:                   98.%
     Inspection type:                   Computerized Test and Repair
     Inspection frequency               Annual
     Vehicle types covered:             LDGV - Yes
                                       LDGT1 - Yes
                                       LDGT2 - Yes
                                        HDGV - Yes
     1981 & later MYR test type:        Idle
     Cutpoints, HC:  220.000   CO:    1.200   NOx:  999.000
0Functional Check Program Description:
0Check Start   Model Yrs  Vehicle Classes Covered        Inspection        Comp
       (Jan1)  Covered    LDGV   LDGT1  LDGT2  HDGV    Type       Freq      Rate

 ATP   1991    1975-2020  Yes    Yes    Yes    Yes Test & Repair Annual    98.0%
0Air pump system disablements:       Yes  Catalyst removals:                  Yes
 Fuel inlet restrictor disablements: Yes  Tailpipe lead deposit test:          No
 EGR disablement:                    Yes  Evaporative system disablements:    Yes
 PCV system disablements:            Yes  Missing gas caps:                   Yes
0VOC HC emission factors include evaporative HC emission factors.
0
0Emission factors are as of July 1st of the indicated calendar year.
 LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied  basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020        I/M Program: Yes       Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
                  Anti-tam. Program: Yes     Operating Mode: 20.6 / 27.3 / 20.6   Altitude:  500. Ft.
                   Reformulated Gas: No
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0URBAN INTERSTATE

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.767	0.062	0.027		0.010	0.003	0.001	0.126	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.83	1.18	1.22	1.19	1.53	0.27	0.41	1.14	5.96	0.924
Exhaust HC:	0.43	0.67	0.75	0.70	0.50	0.27	0.41	1.14	1.37	0.544
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.133
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.148
Runing L HC:	0.09	0.11	0.11	0.11	0.12					0.082
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.017
Exhaust CO:	4.84	7.43	8.26	7.68	8.17	0.69	0.80	5.31	11.87	5.196
Exhaust NOX:	0.98	1.28	1.51	1.35	4.23	0.95	1.12	3.43	1.03	1.357

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN FREEWAY

Minimum Temp: 68. (F) Maximum Temp: 94. (F)

Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	51.0	51.0	51.0		51.0	51.0	51.0	51.0	51.0	
VMT Mix:	0.824	0.059	0.026		0.010	0.003	0.001	0.073	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.74	1.07	1.11	1.09	1.40	0.23	0.35	0.99	5.87	0.813
Exhaust HC:	0.37	0.60	0.66	0.62	0.41	0.23	0.35	0.99	1.29	0.439
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.139
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.157
Runing L HC:	0.06	0.08	0.08	0.08	0.08					0.060
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	3.78	6.06	6.74	6.27	8.44	0.66	0.77	5.09	10.42	4.146
Exhaust NOX:	1.08	1.43	1.69	1.51	4.54	1.13	1.34	4.07	1.18	1.368

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low

Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	26.0	26.0	26.0		26.0	26.0	26.0	26.0	26.0	
VMT Mix:	0.819	0.072	0.031		0.012	0.003	0.002	0.057	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	1.12	1.54	1.62	1.56	2.04	0.39	0.59	1.68	6.49	1.223
Exhaust HC:	0.65	0.97	1.08	1.00	0.93	0.39	0.59	1.68	1.90	0.753
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.142
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.161
Runing L HC:	0.16	0.17	0.17	0.17	0.20					0.150
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	9.04	12.84	14.28	13.27	11.76	1.04	1.21	7.97	19.93	9.449
Exhaust NOX:	0.95	1.28	1.50	1.34	3.76	0.96	1.13	3.45	0.87	1.166

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN MIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	31.0	31.0	31.0		31.0	31.0	31.0	31.0	31.0	
VMT Mix:	0.854	0.062	0.027		0.010	0.003	0.001	0.039	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.99	1.38	1.44	1.40	1.80	0.34	0.51	1.44	6.26	1.071
Exhaust HC:	0.55	0.84	0.93	0.87	0.73	0.34	0.51	1.44	1.67	0.620
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.144
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.163
Runing L HC:	0.13	0.14	0.14	0.14	0.17					0.127
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	7.19	10.46	11.63	10.81	9.86	0.87	1.01	6.65	16.32	7.526
Exhaust NOX:	0.96	1.28	1.51	1.35	3.92	0.92	1.09	3.32	0.95	1.120

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits

0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN COLLECTOR Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	32.0	32.0	32.0		32.0	32.0	32.0	32.0	32.0	
VMT Mix:	0.863	0.064	0.027		0.010	0.003	0.002	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.97	1.35	1.42	1.37	1.76	0.33	0.50	1.41	6.22	1.044
Exhaust HC:	0.54	0.82	0.91	0.84	0.70	0.33	0.50	1.41	1.63	0.592
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.145
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.164
Runing L HC:	0.13	0.14	0.14	0.14	0.16					0.124
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	6.88	10.07	11.20	10.40	9.58	0.84	0.98	6.45	15.72	7.226
Exhaust NOX:	0.97	1.28	1.51	1.35	3.95	0.92	1.09	3.31	0.96	1.094

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0URBAN LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	34.0	34.0	34.0		34.0	34.0	34.0	34.0	34.0	
VMT Mix:	0.821	0.079	0.034		0.013	0.003	0.002	0.044	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.93	1.31	1.36	1.32	1.69	0.31	0.47	1.33	6.14	1.021
Exhaust HC:	0.51	0.78	0.87	0.80	0.64	0.31	0.47	1.33	1.55	0.581
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.145
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.164
Runing L HC:	0.12	0.13	0.13	0.13	0.15					0.114
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	6.34	9.36	10.41	9.68	9.11	0.79	0.92	6.10	14.63	6.745
Exhaust NOX:	0.97	1.28	1.51	1.35	4.01	0.92	1.08	3.30	0.98	1.156

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0RURAL INTERSTATE Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	56.0	56.0	56.0		56.0	56.0	56.0	56.0	56.0	
VMT Mix:	0.727	0.064	0.028		0.011	0.003	0.002	0.161	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.74	1.08	1.12	1.09	1.37	0.22	0.34	0.95	5.97	0.833
Exhaust HC:	0.38	0.61	0.68	0.64	0.39	0.22	0.34	0.95	1.38	0.500
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.129
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.143
Runing L HC:	0.05	0.06	0.06	0.06	0.07					0.046
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.016
Exhaust CO:	4.12	6.55	7.29	6.78	9.31	0.70	0.81	5.33	12.92	4.637
Exhaust NOX:	1.22	1.67	1.97	1.76	4.70	1.30	1.54	4.68	1.36	1.867

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No
0RURAL PRIN ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	53.0	53.0	53.0		53.0	53.0	53.0	53.0	53.0	
VMT Mix:	0.776	0.081	0.035		0.013	0.003	0.002	0.086	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.74	1.07	1.11	1.08	1.38	0.23	0.34	0.97	5.87	0.822
Exhaust HC:	0.37	0.60	0.66	0.62	0.40	0.23	0.34	0.97	1.29	0.453
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.140
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.157
Runing L HC:	0.06	0.07	0.07	0.07	0.08					0.056
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.017
Exhaust CO:	3.78	6.06	6.74	6.27	8.72	0.67	0.78	5.16	10.42	4.260

Exhaust NOX:	1.13	1.52	1.80	1.61	4.61	1.19	1.41	4.29	1.25	1.507

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MINOR ART Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	41.0	41.0	41.0		41.0	41.0	41.0	41.0	41.0	
VMT Mix:	0.792	0.090	0.038		0.015	0.003	0.002	0.056	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.83	1.18	1.22	1.19	1.53	0.27	0.41	1.14	5.96	0.919
Exhaust HC:	0.43	0.67	0.75	0.69	0.50	0.27	0.41	1.14	1.37	0.504
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.144
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.163
Runing L HC:	0.09	0.11	0.11	0.11	0.12					0.089
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	4.84	7.43	8.26	7.68	8.17	0.69	0.80	5.31	11.87	5.286
Exhaust NOX:	0.98	1.28	1.51	1.35	4.23	0.95	1.12	3.43	1.03	1.216

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MAJ COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type: +	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.816	0.079	0.034		0.013	0.003	0.002	0.049	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.79	1.13	1.18	1.15	1.48	0.25	0.38	1.09	5.91	0.871
Exhaust HC:	0.40	0.64	0.71	0.66	0.46	0.25	0.38	1.09	1.32	0.466
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.144
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.163
Runing L HC:	0.08	0.10	0.10	0.10	0.11					0.081

Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	4.34	6.79	7.55	7.02	8.06	0.67	0.78	5.15	11.13	4.742
Exhaust NOX:	0.99	1.28	1.52	1.35	4.32	0.99	1.17	3.55	1.05	1.199

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

0RURAL MIN COL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.825	0.081	0.035		0.013	0.003	0.002	0.037	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.79	1.13	1.18	1.15	1.48	0.25	0.38	1.09	5.91	0.869
Exhaust HC:	0.40	0.64	0.71	0.66	0.46	0.25	0.38	1.09	1.32	0.458
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.146
Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.165
Runing L HC:	0.08	0.10	0.10	0.10	0.11					0.082
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	4.34	6.79	7.55	7.02	8.06	0.67	0.78	5.15	11.13	4.740
Exhaust NOX:	0.99	1.28	1.52	1.35	4.32	0.99	1.17	3.55	1.05	1.169

0Emission factors are as of July 1st of the indicated calendar year.
LEV phase-in begins in 2001 *NOT* using (12/1/92) Guidance Memo Credits
0User supplied basic exhaust emissions rates, veh registration distributions.
0Cal. Year: 2020 I/M Program: Yes Ambient Temp: 87.7 / 87.7 / 87.7 (F) Region: Low
Anti-tam. Program: Yes Operating Mode: 20.6 / 27.3 / 20.6 Altitude: 500. Ft.
Reformulated Gas: No

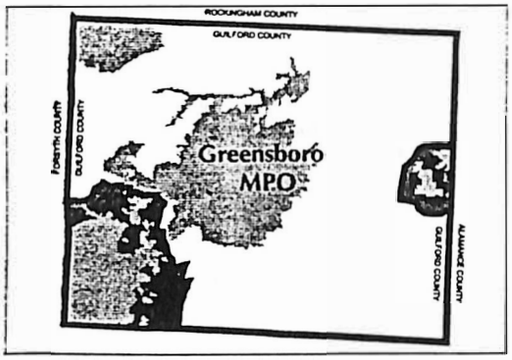
0RURAL LOCAL Minimum Temp: 68. (F) Maximum Temp: 94. (F)
Period 1 RVP: 9.0 Period 2 RVP: 7.8 Period 2 Start Yr: 1992

0 Veh. Type:	LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
+										
Veh. Speeds:	44.0	44.0	44.0		44.0	44.0	44.0	44.0	44.0	
VMT Mix:	0.877	0.055	0.024		0.009	0.003	0.001	0.027	0.004	
ZEV Fract:	0.00 %	0.00 %								
0Composite Emission Factors (Gm/Mile)										
VOC HC:	0.79	1.13	1.18	1.15	1.48	0.25	0.38	1.09	5.91	0.850
Exhaust HC:	0.40	0.64	0.71	0.66	0.46	0.25	0.38	1.09	1.32	0.442
Evaporat HC:	0.13	0.16	0.13	0.15	0.54				4.03	0.145

Refuel L HC:	0.16	0.22	0.22	0.22	0.35					0.164
Runing L HC:	0.08	0.10	0.10	0.10	0.11					0.082
Rsting L HC:	0.02	0.02	0.02	0.02	0.02				0.56	0.018
Exhaust CO:	4.34	6.79	7.55	7.02	8.06	0.67	0.78	5.15	11.13	4.622
Exhaust NOX:	0.99	1.28	1.52	1.35	4.32	0.99	1.17	3.55	1.05	1.116

Appendix D: Description of Future Transportation Systems

2004 Fiscally Constrained Highway and Transit Networks
2014 Fiscally Constrained Highway and Transit Networks
2020 Fiscally Constrained Highway and Transit Networks
2025 Fiscally Constrained Highway and Transit Networks



GREENSBORO URBAN AREA
METROPOLITAN PLANNING ORGANIZATION

Financially Constrained Transportation Plan 2000 – 2025

Prepared by the City of Greensboro Department of Transportation
June 21, 1999

Overview

The horizon year of the Greensboro Urban Area Long Range Transportation Plan is 2025. Essentially all of the connections shown on the Thoroughfare Plan are anticipated to be made by that time. Most of these connections will be made by the year 2020. This determination is reasonable, as demonstrated by the fact that many of the major elements of the thoroughfare plan are already programmed and funded in the North Carolina Department of Transportation (NCDOT) Statewide Transportation Improvement Program (TIP).

2000-2004
This time period reflects the construction of many of the projects scheduled and funded in the state TIP, including the partial construction of the Greensboro Urban Loop and the construction of the Multi-Modal Transportation Center. This time period also reflects several projects programmed in the City of Greensboro Capital Improvements Program. Historically, the City of Greensboro has constructed or financially participated in the construction of a number of projects each year. City of Greensboro projects are not included in the estimates of federal funding. See page 3 for a summary of state and local funds for construction and maintenance of these facilities.

2005-2014
A significant amount of investment programmed and funded in the TIP will be scheduled for the 2005-2014 period. In addition, the projects currently listed as Identified Future Need will be funded and scheduled during this time period, including additional construction of the Greensboro Urban Loop, and the construction of the NC 6/ US 220 connection (Interstate 73).

2015-2020
This period includes the completion of the final segment of the Urban Loop. All other currently programmed TIP projects are assumed to be complete before 2015. Many of the remaining connections shown on the Thoroughfare Plan will be completed. Highway construction is assumed to decline from earlier periods in the plan reflecting the minimal presence of major freeway projects.

City of Greensboro Department of Transportation, Lead Planning Agency
P.O. Box 3136 Greensboro, NC 27402-3136 Telephone (336) 373-2332 FAX (336) 412-6171

2021-2025
The remaining, lower priority Thoroughfare Plan connections will be completed.

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GREENSBORO URBAN AREA
METROPOLITAN PLANNING ORGANIZATION

Financial Data – Federal Funding

(estimates in $1000s—all in 2000 dollars)

Projects in the fiscally constrained plan are divided into two categories: federally funded projects that will appear in the NCDOT TIP and local projects to be constructed by the City of Greensboro or other agency using local and state funds. The following funding estimates reflect expected federal spending levels for project construction. Maintenance of existing and future state system streets will continue through existing funding mechanisms of NCDOT. The following federal funding estimates are based on historical data and current funding levels. Forecasts beyond the current TIP period were based on the level of investment activity identified for the Greensboro Urban Area and expected growth in federal and state transportation programs.

2000-2004
Revenue Estimate: 240,000
Based on current amount funded in the NCDOT 2000-2006 Transportation Improvement Program (TIP).

2005-2014
Revenue Estimate: 721,000
Assumes 2% revenue growth per year over historical levels, accommodating a substantial amount of highway construction.

2015-2020
Revenue Estimate: 263,800
Assumes an initial 40% decline in revenues based on completion of the urban loop and Interstate 73. Assumes a 1% annual revenue growth after 2015.

2021-2025
Revenue Estimate: 232,200
Assumes a 1% annual revenue growth reflecting fewer identified projects.

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FINANCIAL DATA – FUNDING SOURCES FOR LOCAL CONSTRUCTION AND MAINTENANCE

The City of Greensboro has an active Capital Improvements Program, in which several transportation improvement projects are initiated each year. These local projects are funded through a variety of sources, outlined below. Local-system streets are maintained Using funding from all three of the sources outlined below. Many of the widening and new construction projects are funded through the Transportation Bond Fund. Anticipated future local projects are listed on in this Transportation Plan Update for the purpose of coding into the transportation network. Locally constructed projects are not included in the federal funding estimate for each time period.

FUNDS USED FOR LOCAL CONSTRUCTION AND MAINTENANCE

- **Revolving Street / Sidewalk Fund**
  Revenues Received From public assessments as part of infrastructure improvement projects (curb and gutter assessments), vehicle fees, grants, and reimbursements.
  Spending Eligibility: Normally limited to street and sidewalk improvements only.

  Future Funding Expectation: Expected to continue at present levels.

- **Powell Bill Fund**
  State Gasoline Tax Revenues. Apportioned to qualifying municipalities based on population and lane miles of city streets. This is the primary fund used for street maintenance.
  Spending Eligibility: Limited to maintaining repairing, constructing, reconstructing, or widening city streets, bridges, sidewalks and bikeways only.

  Future Funding Expectation: Expected to increase in proportion to total street mileage and population.

- **Transportation Bond Fund**
  Last Bond Issued: 1988
  From the period of 1988-1998 The Bond Program allowed the completion of over 30 local roadway improvement projects as well as a number of streetscape and infrastructure improvement projects.
  Spending Eligibility: Not Limited

  Future Funding Expectation: The City of Greensboro is preparing for a future bond issue similar to the 1988 Bond Package. The package is contingent on City Council authorization and voter approval.

GREENSBORO MPO
FINANCIALLY CONSTRAINED TRANSPORTATION PLAN 2000 – 2025
Prepared by the City of Greensboro Department of Transportation
May 3, 1999
PROJECT LIST

2000-2004									
Map Code	Funding Source	NCDOT TIP#	Project Name	Project Limits	Project Length (MI)	Existing	Proposed	Functional Class	Regionally Significant
	WIDENINGS								
A1	Federal	I-2201	Interstate 40	Holden Rd. to Sandy Ridge Rd.	10.9	4 lane freeway	6-10 lane freeway	Interstate	Yes
A2	Federal	U-2581 (part)	US 70	Penry Rd. to Willow Lake Rd.	1.1	2 lane	5 lane	Minor Arterial	Yes
				(refer to B6 for the remaider of the project)					
A3	Federal	U-2815 (part)	Airport Parkway	Construct tunnel, interchange at South Triad Blvd.,	NA	At Grade	Interchange	Freeway/Expressway	Yes
				and interchange at Old Oak Ridge Rd.		Grade Separated	Interchange		
				(refer to B22 for the remaider of the project)					
A4	Federal	R-2413 (part)	US 220	NC 68 Connector to Rockingham County	1.8	2 lane	4 lane freeway	Other Principal Arterial	Yes
				(refer to B12 for the remaider of the project)					
A5**	Federal	R-2309 (part)	US 220	Cotswold Terrace to Horsepen Creek Rd.	0.9	2 lane	5 lane	Other Principal Arterial	Yes
				(refer to B7 for the remaider of the project)					
A8	Federal	U-2913 (part)	Guilford College Rd.	High Point Rd. to MacKay Rd.	1.5	2 lane	4-5 lane	Minor Arterial	Yes
				North of Sapp Rd. to Hornaday Rd.	0.7				
				(refer to B23 for the remaider of the project)					
A9	Local		New Garden Rd.	Fleming Road to Brassfield Rd	2.1	2 lane	4-5 lane	Minor Arterial	No
A11	Local		Gallimore Dairy Rd.	NC 68 to West Market Street	1.8	2 lane	4-5 lane	Collector	No
A13	Federal	U-3429	Vickery Chapel Rd.	I-85 Business to Grandover Parkway	0.3	2 lane	4-5 lane	Collector	No
A14**	Local		Merritt Drive	I-40 to Spring Garden St.	1.0	2 lane	4-5 lane	Minor Arterial	No
A15	Local		Merritt Drive	I-40 to High Point Rd.	1.0	3 lane	4-5 lane	Minor Arterial	No
A16	Local		Vandalia Road	Western City Limits to Holden Rd.	0.8	2 lane	3 lane	Minor Arterial	No
	NEW FACILITES								
A17	Federal	I-2402	Southern Urban Loop	I-40/I-85 @ McConnell Rd. to I-85 @ Grandover	14.7		6 lane freeway	Freeway/Expressway	Yes
A18	Federal	U-2525 (part)	Eastern Urban Loop	US 70 to I-40/I-85 @ McConnell Rd.	1.8		4 lane freeway	Freeway/Expressway	Yes
				(refer to B14 and C3 for the remaider of the project)					
A20	Local		Old Friendly/Gallimore	Existing Old Friendly Road to West Market St.	0.3		4-5 lane	Collector*	No

* Proposed classification. Not currently classified.
**These projects are now complete.

GREENSBORO MPO
FINANCIALLY CONSTRAINED TRANSPORTATION PLAN 2000 – 2025
Prepared by the City of Greensboro Department of Transportation
May 3, 1999
PROJECT LIST

2005-2014

Map Code	Funding Source	NCDOT TIP#	Project Name	Project Limits	Project Length (MI)	Existing	Proposed	Functional Class	Regionally Significant
	WIDENINGS								
B1	Federal	R-2611	West Market St.	NC 68 to Bunker Hill Rd. in Colfax	3.6	2 lane	4-5 lane	Major Collector	Yes
B2	Local		Alamance Church Rd.	US 421 to Southern Urban Loop	2.8	2 lane	4-5 lane	Minor Arterial	Yes
B3	Federal	R-2577 (part)	US 158	Forsyth County Line to US 220	1.5	2 lane	4-5 lane	Minor Arterial	Yes
				(remainder of the project lies in Forsyth Co.)					
B4	Federal	R-2580 (part)	US 158	US 220 to Rockingham County Line	7.0	2 lane	4-5 lane	Minor Arterial	Yes
				(remainder of the project lies in Rockingham Co.)					
B5	Federal	R-2910 (part)	US 70	Rock Creek Dairy Road to County Line	0.3	2 lane	5 lane	Major Collector	Yes
				(remainder of the project lies in Alamance Co.)					
B6	Federal	U-25B1 (part)	US 70	Willow Lake Rd. to Rock Creek Dairy Rd.	4.1	2 lane	5 lane	Major Collector/Minor Arterial	Yes
				(refer to A2 for the remainder of the project)					
B7	Federal	R-2309 (part)	US 220	Horsepen Creek Rd. to Proposed I-73	6.3	2 lane	5 lane	Other Principal Arterial	Yes
				(refer to A5 for the remaider of the project)					
B8	Local		Holden/Drummond Rd.	Glendale Dr. to Old Randleman Rd.	1.9	2 lane	4-5 lane	Minor Collector	No
B9	Local		Elm-Eugene Street	Vandalia Rd to Southern Urban Loop	0.8	2 lane	5 lane	Minor Arterial	Yes
B10	Local		Vandalia Road	Elm-Eugene St. to Pleasant Garden Rd.	1.0	2 lane	5 lane	Minor Arterial	No
B11	Local		Fleming/Lewiston Rd.	Bryan Boulevard to Pleasant Ridge Rd.	4.8	2 lane	5 lane	Collector/Minor Collector	No
B22	Federal	U-2B15 (part)	Airport Parkway	Interchange at North Triad Blvd.	NA	At grade	Interchange	Freeway/Expressway	Yes
				(refer to A3 for the remaider of the project)					
B23	Federal	U-2913 (part) (+)	Guilford College Rd.	MacKay Rd. to I-40	3	2 lane	4-5 lane	Minor Arterial	Yes
				(refer to A8 for the remainder of the project)					
B24	Federal	R-2612	US 421	Interchange at Company Mill Rd.	NA	At grade	Interchange	Other Principal Arterial	Yes
B25	Federal	U-2412	High Point Road	Hilltop Rd. to Proposed US 311 Bypass	7.8	2 lane	4-5 lane	Other Principal Arterial	Yes
B26	Federal	U-3612 (+)	Hilltop Road	High Point Rd. to Guilford College Rd.	3.2	2 lane	4-5 lane	Minor Arterial	No
B27	Federal	U-3313	Groometown Rd.	Wiley Davis Rd. to Vandalia Rd.	1.2	2 lane	4-5 lane	Minor Arterial	No
	NEW FACILITES								
B12	Federal	R-2413 (part)	220/6B Connector (I-73)	US 220 @ Haw River to NC 68 @ Edgefield Rd.	10.6		4 lane freeway	Interstate*	Yes
				(refer to A4 for the remainder of the project)					
B13	Federal	U-2524	Western Urban Loop	I-85 @ Grandover to Lawndale Dr.	15.0		4-8 lane freeway	Freeway/Expressway	Yes
B14	Federal	U-2525 (part)	Eastern Urban Loop	US 70 to US 29	4.8		4 lane freeway	Freeway/Expressway	Yes
				(refer to C3 for the remainder of the project)					
B15	Federal		Cone Blvd. Extension	McKnight Mill Rd. to Hines Chapel Rd.	2.8		3 lane	Local	No
B16	Local		Florida St. Extension	Lee St. to McConnell Road	0.7		5 lane	Collector	No
B17	Local		Franklin Blvd. Ext.	McConnell Rd. to Florida Street Extension	0.2		3 lane	Local	No
B18	Federal		Lewiston/Flemming	Connection and Interchange at Urban Loop	0.6		3 lane/interchange	Minor Arterial*	No
B19	Federal		Vandalia Road Ext.	Pleasant Garden Rd. to Wiley Lewis Rd.	2.4		3 lane	Minor Arterial*	No
B20	Federal		Young's Mill Ext.	Thoroughfare Plan Connection to SE School Rd.	1.2		2 lane	Minor Collector*	No
B21	Local	U-4006	Bridford Pkwy. Ext.	Existing end to Guilford College Rd.	0.8		5 lane	Collector*	No

* Proposed classification. Not currently classified.

GREENSBORO MPO
FINANCIALLY CONSTRAINED TRANSPORTATION PLAN 2000 – 2025
Prepared by the City of Greensboro Department of Transportation
May 3, 1999
PROJECT LIST

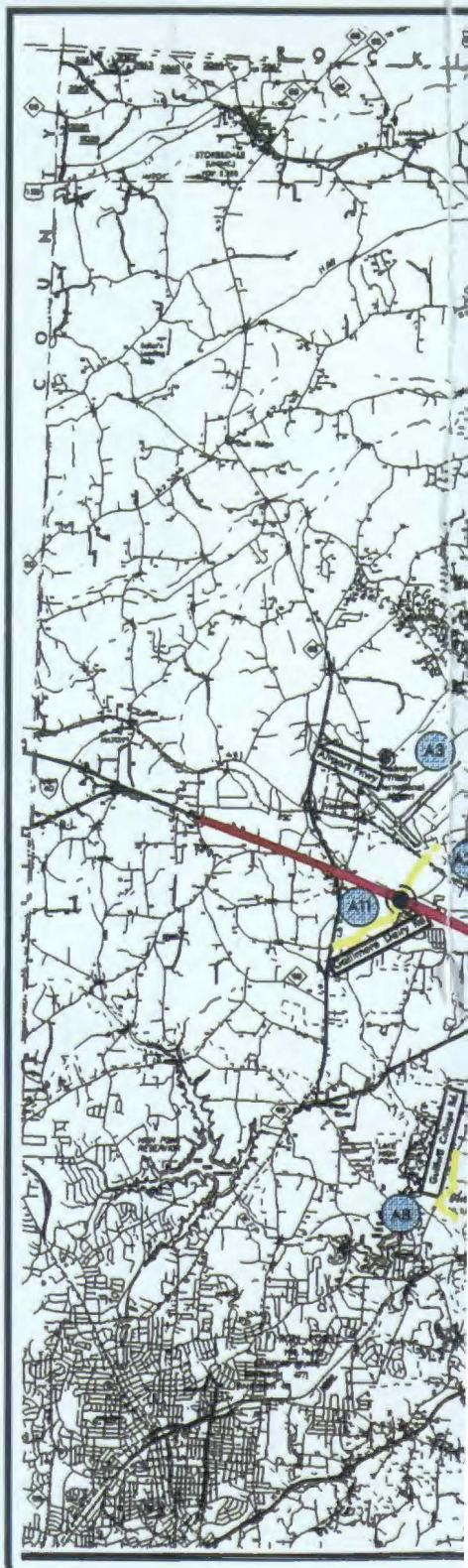
2015-2020									
Map Code	Funding Source	NCDOT TIP#	Project Name	Project Limits	Project Length (MI)	Existing	Proposed	Functional Class	
	WIDENINGS								
C1	Local		Horsepen Creek Rd.	New Garden Rd. to Quaker Run	1.3	2 lane	4-5 lane	Collector	No
C2	Local		Battleground Ave.	Cotswold Rd. to Westridge Rd.	1.3	5 lane	7 lane	Other Principal Arterial	Yes
	NEW FACILITES								
C3	Federal	U-2525 (part)	Eastern Urban Loop	Lawndale Dr. to US 29	8.5		4 lane freeway	Freeway/Expressway	Yes
				(refer to B14 for the remainder of the project)					
C4	Federal		Airport Pkwy. Ext.	NC 68 to Pleasant Ridge Rd.	0.9		4 lane freeway	Freeway/Expressway*	Yes
C5	Federal		Fleming Horsepen	Connector - Fleming Rd to Horsepen Creek Rd.	0.7		3 lane	Minor Arterial*	No
C6	Federal		Hicone Rd. Extension	US 29 to Lee's Chapel Rd. / Urban Loop	1.0		2 lane	Minor Arterial*	No
C7	Federal		NC 150 / Brookbank	Relocation of NC 150 between US 220 and I-73	2.0		2 lane	Major Collector*	No
C8	Federal		US 158 Bypass	New Location around Town of Stokesdale	2.7		4-5 lane	Minor Arterial*	Yes
C9	Federal		Sandy Ridge Rd.	Connector from I-40 to West Market St.	0.9		2 lane	Minor Collector*	No
C10	Local		Nealtown Rd. Ext.	To Cone Blvd. and Penry Rd.	0.4		2-3 lane	Local*	No
C11	Federal		Ritter's Lake/Holden Rd.	Connector - Randleman Rd. to Old Randleman Rd.	0.7		3 lane	Minor Arterial*	No
C12	Federal		Steeple Chase Rd. Ext.	Garden Court to Interchange at US 421	4.3		2 lane	Minor Collector*	No
C13	Federal		Burnett's Chapel Rd.	Connection to Steeple Chase Rd.	0.6		2 lane	Minor Collector*	No
C14	Federal		Turner-Smith Rd.	Extension from Mcleansville Rd. to US 29	2.2		2 lane	Major Collector*	No

* Proposed classification. Not currently classified.

GREENSBORO MPO
FINANCIALLY CONSTRAINED TRANSPORTATION PLAN 2000 – 2025
Prepared by the City of Greensboro Department of Transportation
May 3, 1999
PROJECT LIST

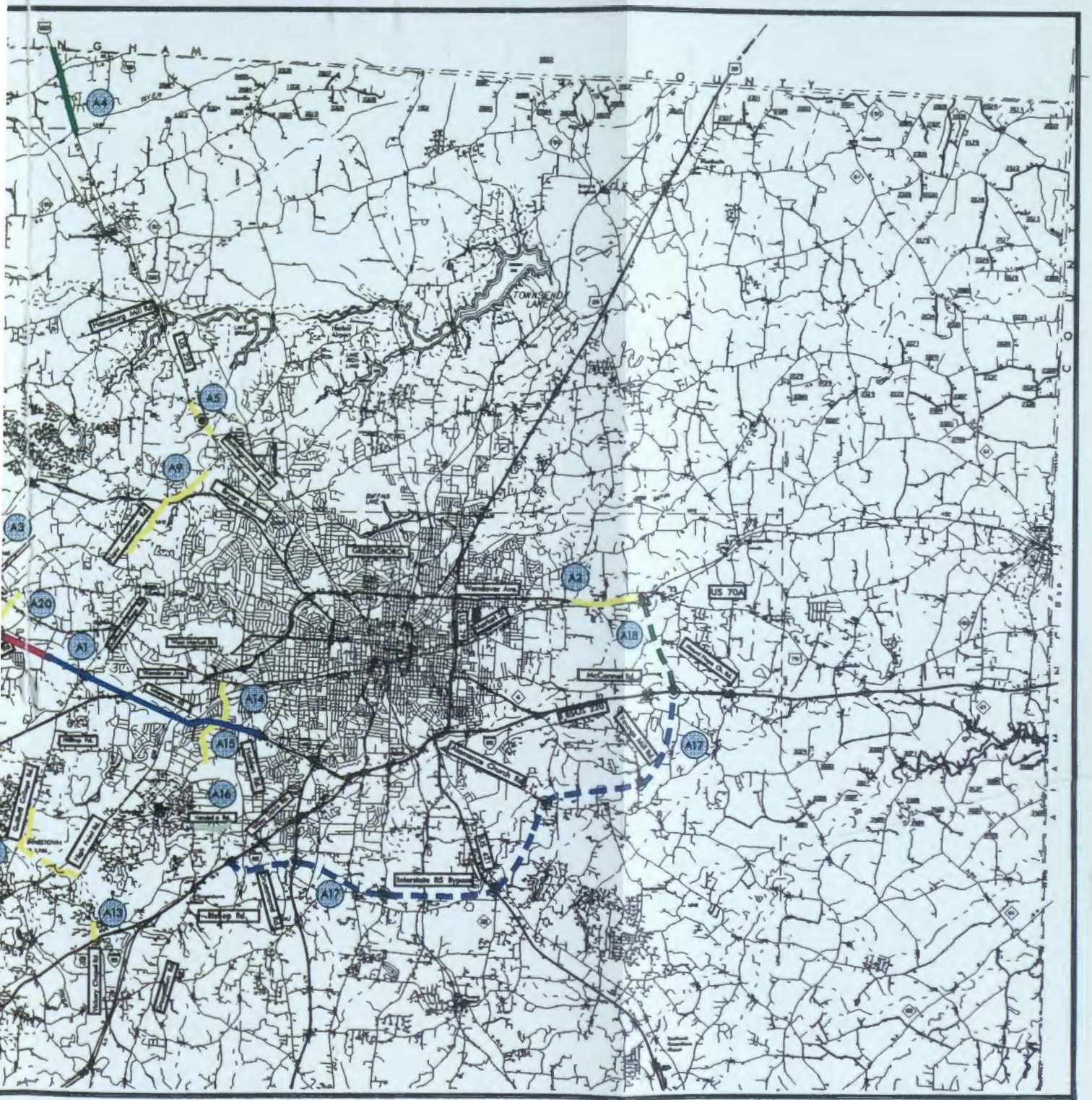
2021-2025									
Map Code	Funding Source	NCDOT TIP#	Project Name	Project Limits	Project Length (MI)	Existing	Proposed	Functional Class	
	NEW FACILITES								
D1	Federal		Bishop Rd./Spur Rd.	Connector - Viewmont Rd. to Randleman Rd.	3.2		2-3 lane	Minor Collector*	No
D2	Federal		Rock Creek Dairy Rd.	Extension to Thacker Dairy Rd.	1.1		2 lane	Minor Collector*	No
D3	Federal		Holt's Chapel Rd.	Extension - JFH Dairy Rd. to Mount Hope Church	2.8		2-3 lane	Local*	No
D4	Federal		NC 62 Relocation	Near US 421	1.2		2 lane	Major Collector*	No

* Proposed classification. Not currently classified.



LEGEND

	EXISTING	PROPO
2 LANE		
3 LANE		
4 LANE FREEWAY		
4 LANE DIVIDED		
5 LANE		
6 LANE FREEWAY		
7 LANE		
8 LANE FREEWAY		
10 LANE FREEWAY		
INTERCHANGE	●	(



2004 FISCALLY CONSTRAINED PLAN

FIGURE 1

PROPOSED

YEAR 2004

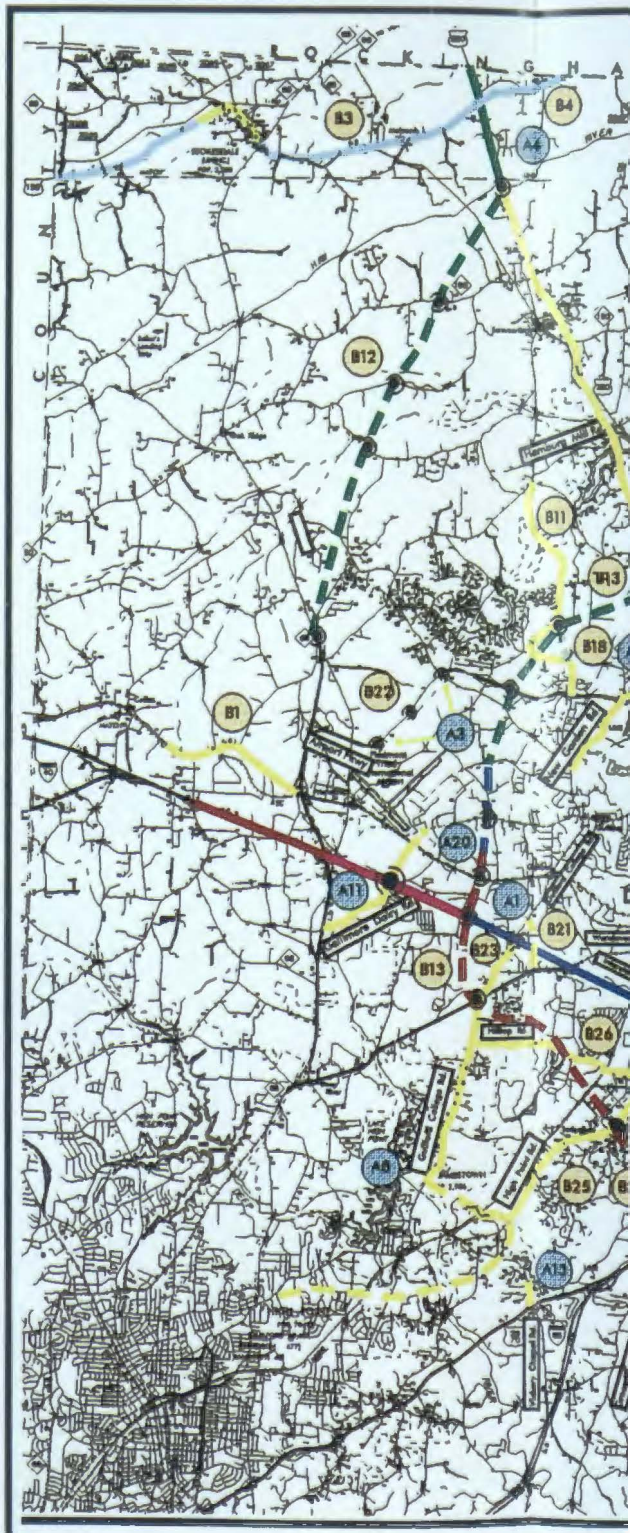
GUILFORD COUNTY

NORTH CAROLINA

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

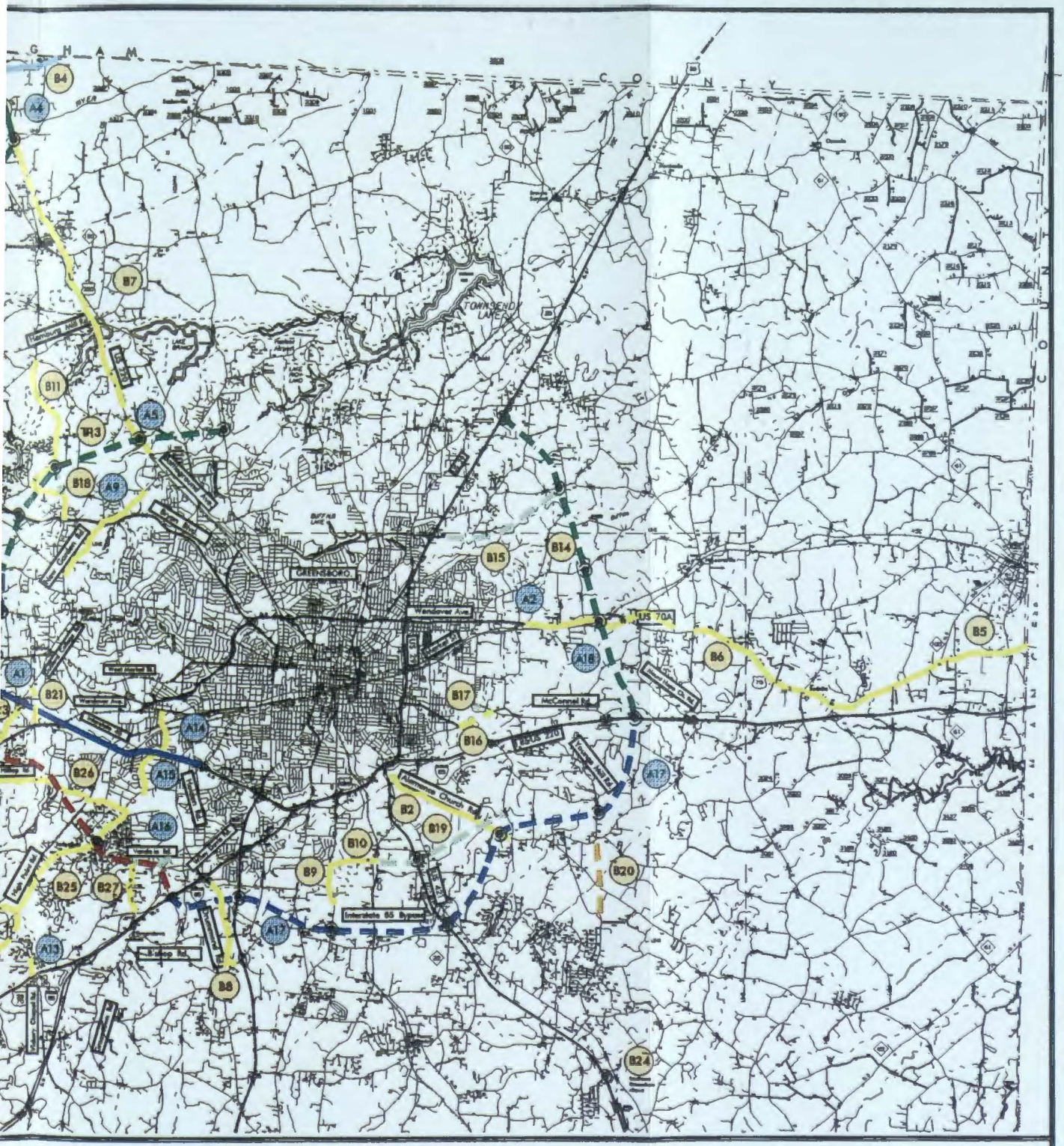
MAP DATE: MAY 3, 1999



LEGEND

	EXISTING	PROPOSED
2 LANE		
3 LANE		
4 LANE FREEWAY		
4 LANE DIVIDED		
5 LANE		
6 LANE FREEWAY		
7 LANE		
8 LANE FREEWAY		
10 LANE FREEWAY		
INTERCHANGE	●	◉

20



2014 FISCALLY CONSTRAINED PLAN

FIGURE 2

YEAR 2004

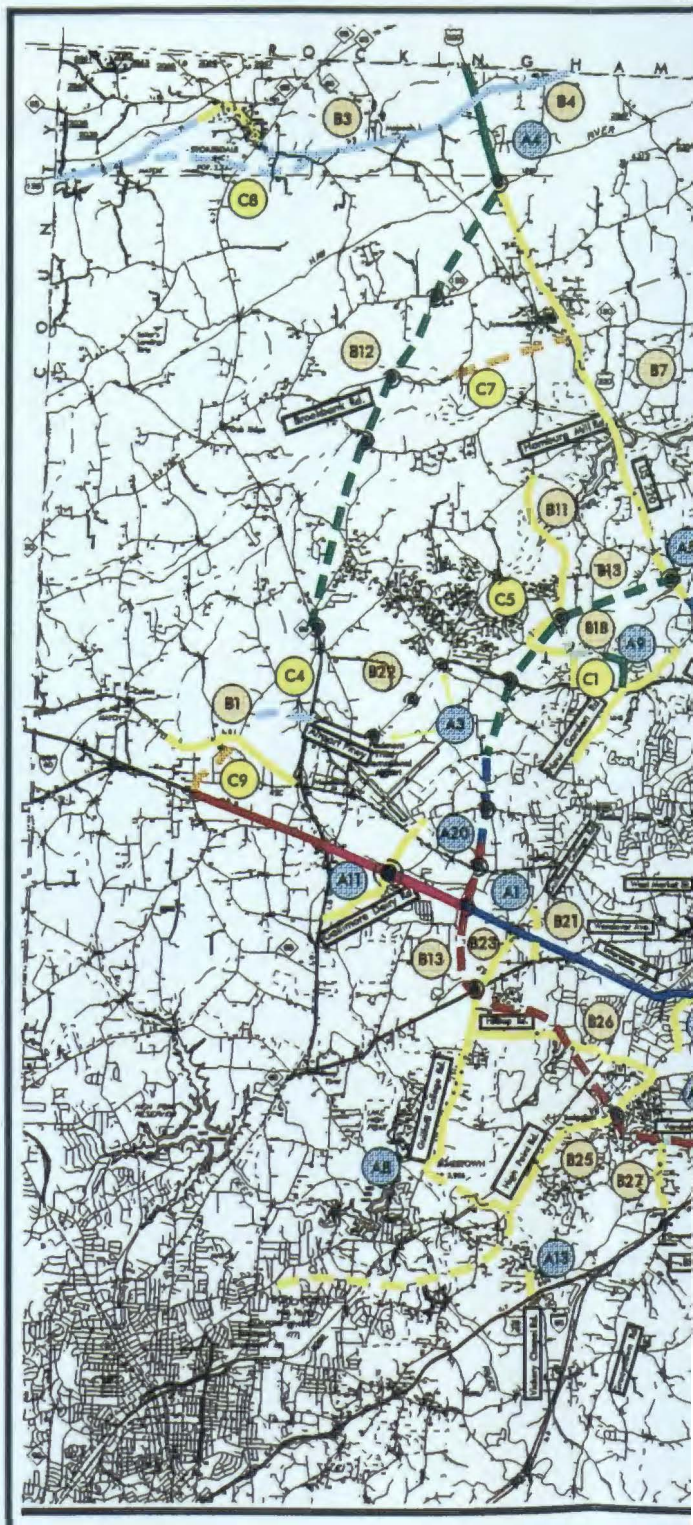
YEAR 2014

GUILFORD COUNTY
NORTH CAROLINA

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

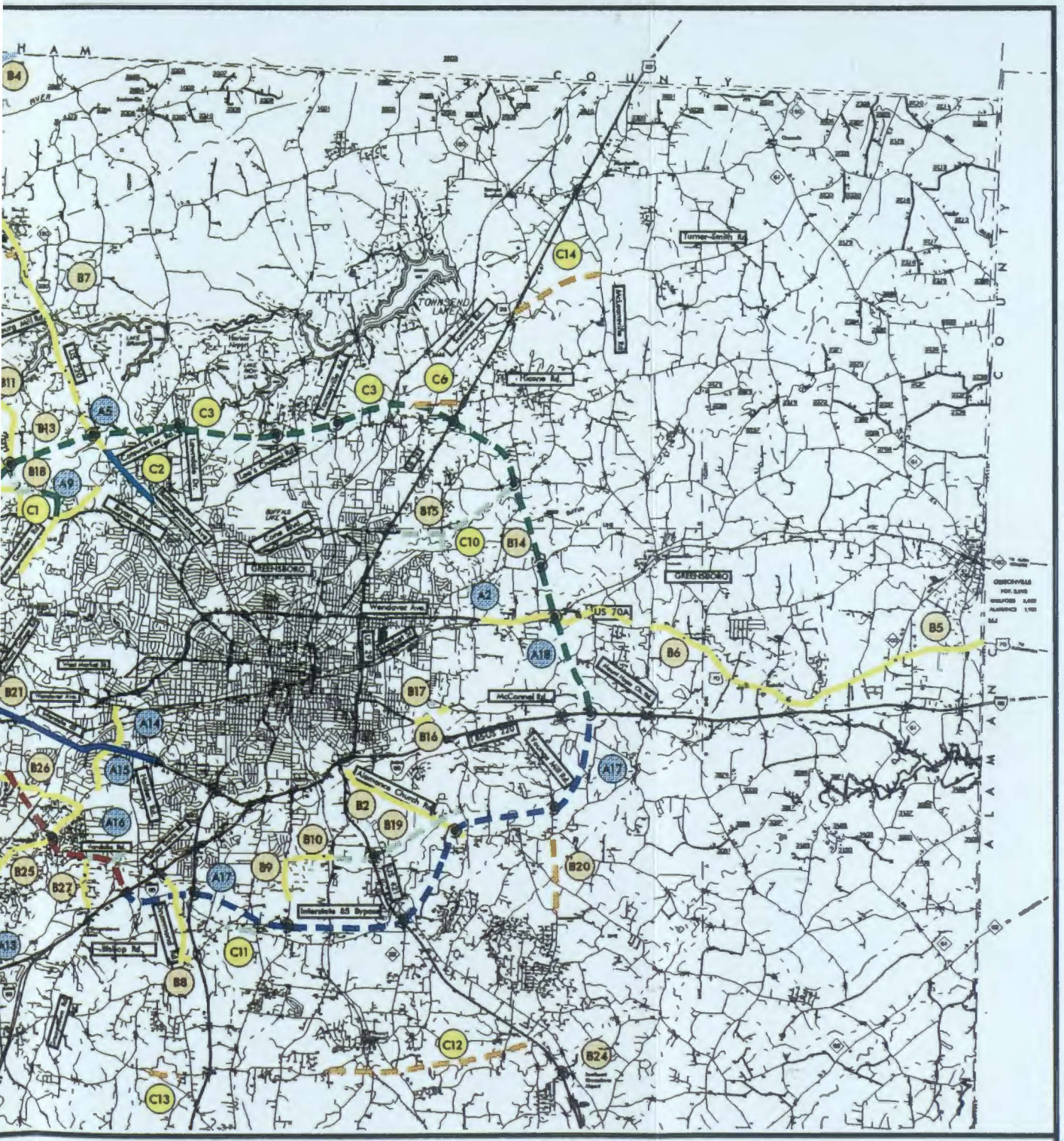
MAP DATE: FEBRUARY 24, 1998



LEGEND

2020

	EXISTING	PROPOSED
2 LANE		
3 LANE		
4 LANE FREEWAY		
4 LANE DIVIDED		
5 LANE		
6 LANE FREEWAY		
7 LANE		
8 LANE FREEWAY		
10 LANE FREEWAY		
INTERCHANGE	●	(●)



2020 FISCALLY CONSTRAINED PLAN

YEAR 2004

YEAR 2014

YEAR 2020

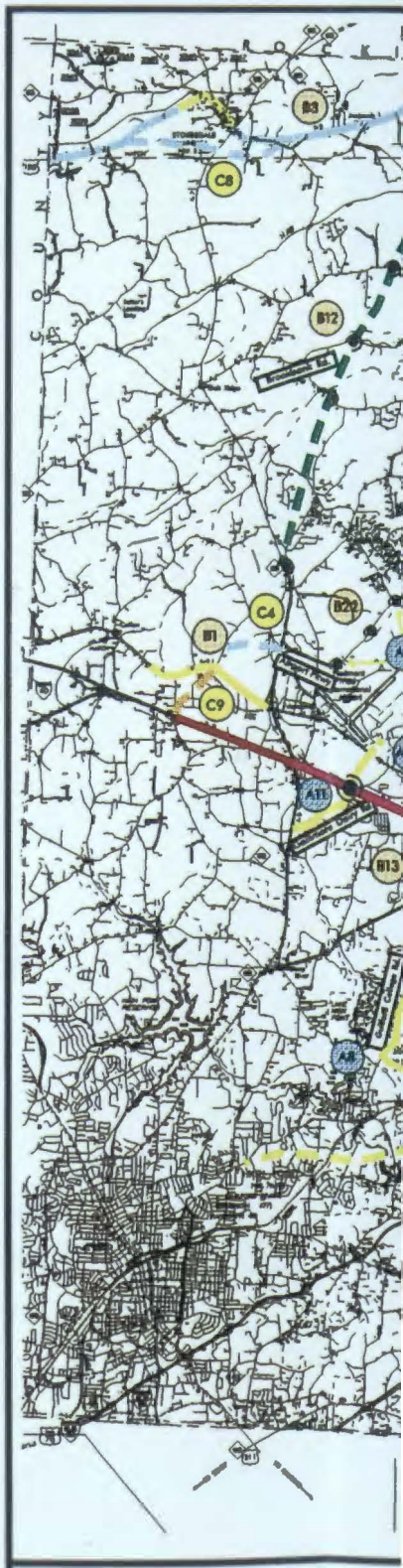
FIGURE 3

GUILFORD COUNTY
NORTH CAROLINA

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

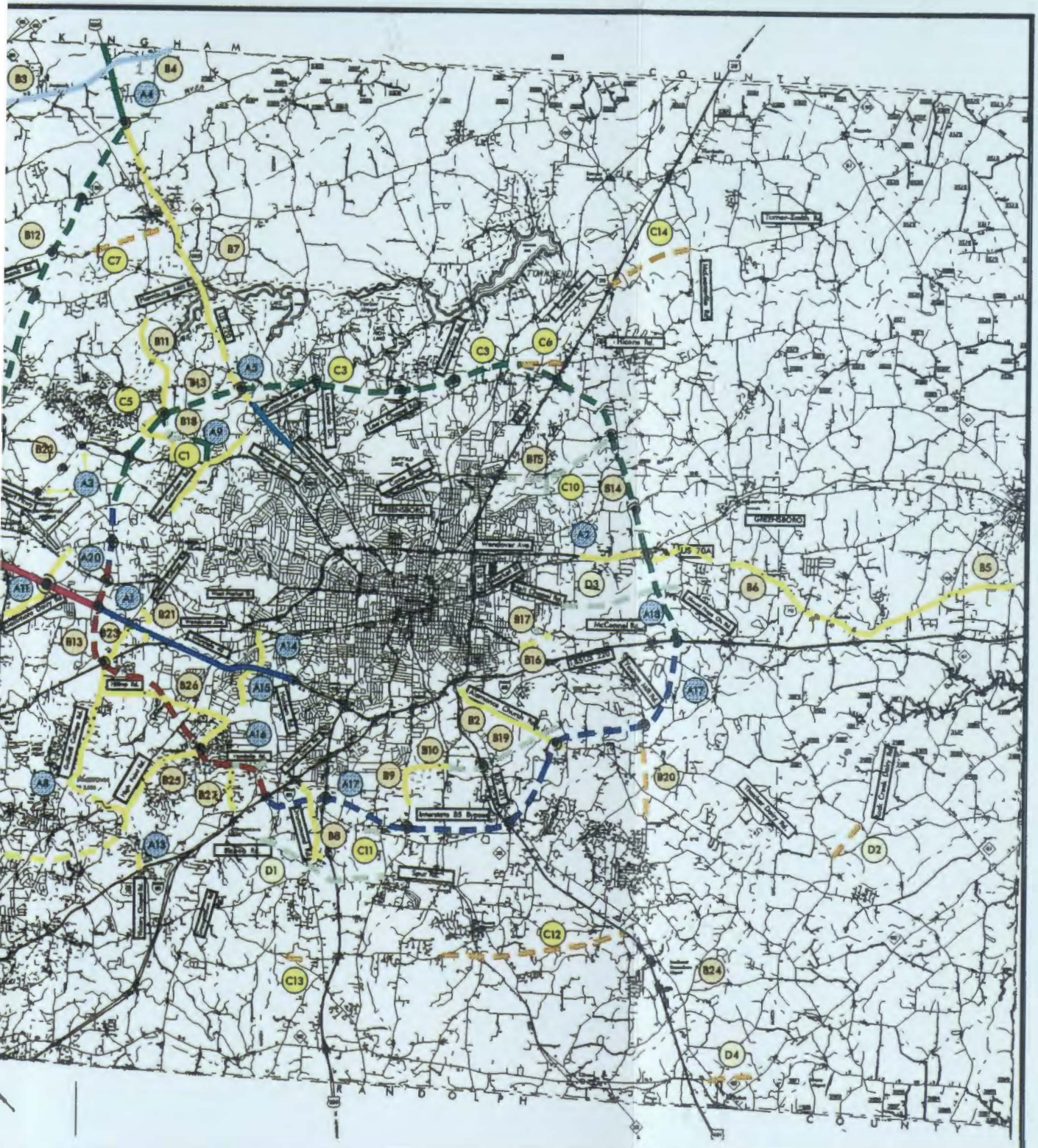
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

MAP DATE: FEBRUARY 26, 1998



LEGEND

	EXISTING	PROPO
2 LANE		
3 LANE		
4 LANE FREEWAY		
4 LANE DIVIDED		
5 LANE		
6 LANE FREEWAY		
7 LANE		
8 LANE FREEWAY		
10 LANE FREEWAY		
INTERCHANGE	●	



2025 FISCALLY CONSTRAINED PLAN

PROPOSED

YEAR 2004

YEAR 2014

YEAR 2020

YEAR 2025

SCALE

0 1 2 3 4 MILES

FIGURE 4

GUILFORD COUNTY
NORTH CAROLINA

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

MAP DATE: FEBRUARY 26, 1998

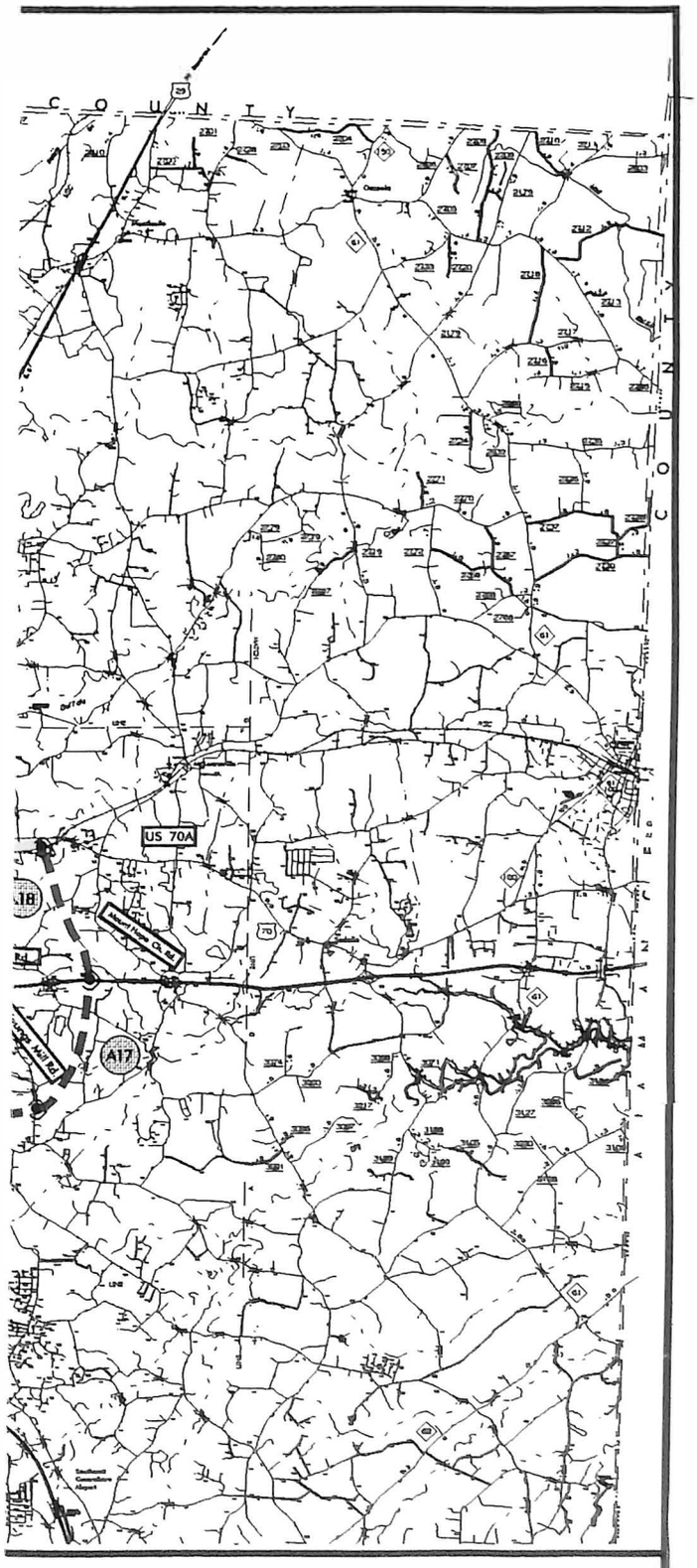


FIGURE 1

N

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GUILFORD COUNTY

NORTH CAROLINA

PREPARED BY THE

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

MAP DATE: MAY 3, 1999

Appendix E: VMT Normalization Methodology

The Division of Air Quality (DAQ) developed the VMT, used in the SIP, by linear regression of historic county data. The VMT used for this conformity process will be estimated using travel demand models. It is likely that there will be significant differences between VMTs produced by these two methods. Before estimating emissions VMT used in the conformity analysis will be adjusted using the VMT adjustment method described in Statewide Planning Branch's March 14, 1997 letter to Federal Highway Administration[5].

The method described in the March 14, 1997 letter is repeated below for completeness.

1. Convert county Universe VMT to Modeled Area VMT using the formulas shown below where population serves as a surrogate for system density:

$$Modeled\ Area\ VMT_{BaseYear} = \left(\frac{Modeled\ Area\ Population_{BaseYear}}{County\ Population_{BaseYear}} \right) \times County\ VMT_{BaseYear}$$

2. Aggregate Modeled Area Universe file VMT by federal functional classification.

3. Further aggregate the Universe File VMT into local and nonlocal totals.

4. Aggregate the model VMT by federal functional classification.

5. Further aggregate the model VMT into local and nonlocal totals.

6. Develop a local normalization factor using the formula shown below:

$$Local_{Fac} = \frac{Local\ Universe_{BaseYear}}{Local\ Model_{BaseYear}}.$$

7. Develop a nonlocal normalization factor using the formula shown below:

$$NonLocal_{Fac} = \frac{NonLocal\ Universe_{BaseYear}}{NonLocal\ Model_{BaseYear}}.$$

8. Aggregate the model VMT for each year by federal functional classification.

9. Apply the local and non-local normalization factors to the appropriate functional classification from the model for each analysis year.

[5] In addition to FHWA this method was also reviewed by DAQ, FTA, and EPA.

Appendix F: VMT and Emissions Calculations

Emissions Budget Comparison

Volatile Organic Compound Comparison Table

Analysis Year	Model	Off-Model	Comparison Amount	Budget Amount
1994	16,748	178	16,570	23,671
1999	13,865	213	14,672	23,336
2002	13,359	234	13,533	23,481
2004	13,022	248	12,774	23,844
2014	15,576	331	15,245	23,844
2020	16,817	552	16,265	23,844
2025	18,141	546	17,595	23,844

NOx Comparison Table

Analysis Year	Model	Off-Model	Comparison Amount	Budget Amount
1994	23,704	236	23,468	39,715
1999	20,726	322	20,434	39,920
2002	18,975	373	18,614	39,394
2004	17,807	407	17,400	39,798
2014	19,173	475	18,698	39,798
2020	20,856	535	20,321	39,798
2025	22,400	357	22,043	39,798

VMT Reconciliation Calculation

VMT Adjustment Factors	Non-Local	Local			
	0.8493	1.4476			
Year	**1994**	**2004**	**2014**	**2020**	**2025**
Model VMT					
Urban Functional Classification					
Interstate	2,315,414	2,566,058	3,127,000	3,286,774	3,531,692
Freeway	964,832	175,295	2,692,109	3,064,264	3,499,369
Other P-A	1,733,946	1,980,716	2,201,719	2,259,997	2,328,843
Minor Arterial	2,707,559	3,171,779	3,467,444	3,710,722	3,966,581
Collector	622,506	694,554	737,447	775,378	819,194
Local	395,119	476,946	546,431	615,749	653,297
Total Urban	8,739,376	9,065,349	12,772,151	13,712,884	14,798,977
Rural Functional Classification					
Interstate	623,199	816,430	1,020,497	1,109,744	1,204,382
Other P-A	529,833	698,322	903,401	991,220	1,126,288
Minor Arterial	195,084	243,669	273,382	299,906	293,128
Major Collector	509,607	690,750	880,793	1,018,034	1,108,070
Minor Collector	376,923	529,499	657,028	771,870	850,260
Local	280,996	387,215	487,819	601,883	661,463
Total Rural	2,515,642	3,365,885	4,222,920	4,792,657	5,243,590
Grand Totals	11,255,018	12,431,234	16,995,071	18,505,541	20,042,567
Normalized VMT					
Urban Functional Classification					
Interstate	1,966,481	2,179,353	2,655,761	2,791,457	2,999,466
Freeway	819,432	148,878	2,286,408	2,602,480	2,972,014
Other P-A	1,472,640	1,682,223	1,869,920	1,919,415	1,977,887
Minor Arterial	2,299,530	2,693,792	2,944,900	3,151,516	3,368,818
Collector	528,694	589,885	626,314	658,529	695,742
Local	571,974	690,427	791,014	891,359	945,713
Urban Total	7,658,751	7,984,558	11,174,317	12,014,756	12,959,640
Rural Functional Classification					
Interstate	529,283	693,394	866,708	942,506	1,022,881
Other P-A	449,987	593,084	767,258	841,843	956,556
Minor Arterial	165,685	206,948	232,183	254,710	248,954
Major Collector	432,809	586,654	748,058	864,616	941,083
Minor Collector	320,121	449,703	558,014	655,549	722,126
Local	406,770	560,532	706,167	871,286	957,534
Rural Total	2,304,655	3,090,315	3,878,388	4,430,510	4,849,134
	1994	**2004**	**2014**	**2020**	**2025**
Grand Total	9,963,406	11,074,873	15,052,705	16,445,266	17,808,774

Speed and Inspection Data

Assumed Speed					
Year	1994	2004	2014	2020	2025
Urban Functional Classification					
Interstate	41	42	41	41	41
Freeway	46	47	47	51	51
Other P-A	27	28	27	26	25
Minor Arterial	30	31	31	31	31
Collector	31	32	32	32	31
Local	33	34	34	34	33
Rural Functional Classification					
Interstate	56	56	56	56	56
Other P-A	53	53	53	53	53
Minor Arterial	41	41	41	41	42
Major Collector	44	43	44	44	44
Minor Collector	44	44	44	44	44
Local	44	44	44	44	44

Percent of Vehicles Subject to I&M in Each Analysis Year					
	1994	2004	2014	2020	2025
	71.00%	71.00%	71.00%	71.00%	71.00%

Oxides of Nitrogen Calculation

Year of Analysis =	1994					
		Emissions Factors with I&M	Emissions Factors without I&M	Composite Emissions Rate	Vehicle Miles of Travel	KG of Emissions per Day
Functional Classification	**Percent of Vehicles Subject to I&M**	71.00%	29.00%			
Urban Functional Classification	**Speed**					
Interstate	41	2.865	2.896	2.87	1,966,481	5643.80
Freeway	46	2.398	2.430	2.41	819,432	1,974.83
Other P-A	27	2.114	2.146	2.12	1,472,640	3,122.00
Minor Arterial	30	1.927	1.960	1.94	2,299,530	4,461.09
Collector	31	1.813	1.847	1.82	528,694	962.22
Local	33	2.008	2.041	2.02	571,974	1,155.39
				Total Urban	7,658,751	17,31[illegible]
Rural Functional Classification	**Speed**					
Interstate	56	4.326	4.364	4.34	529,283	2,297.09
Other P-A	53	3.036	3.074	3.05	449,987	1,372.46
Minor Arterial	41	2.197	2.229	2.21	165,685	366.16
Major Collector	44	2.146	2.179	2.16	432,809	934.87
Minor Collector	44	2.021	2.054	2.03	320,121	649.85
Local	44	1.869	1.904	1.88	406,770	764.73
				Total Rural	2,304,655	6,385.15

Total Normalized VMT for this Analysis Year=	9,963,406	Total NO_x Emissions (Kilograms per Day)	23,704

Year of Analysis =	2004					
		Emissions Factors with I&M	Emissions Factors without I&M	Composite Emissions Rate	Vehicle Miles of Travel	KG of Emissions per Day
Functional Classification	**Percent of Vehicles Subject to I&M**	71.00%	29.00%			
Urban Functional Classification	**Speed**					
Interstate	42	1.894	1.935	1.91	2,179,353	4162.56
Freeway	47	1.611	1.661	1.63	148,878	242.67
Other P-A	28	1.435	1.488	1.45	1,682,223	2,439.22
Minor Arterial	31	1.324	1.377	1.34	2,693,792	3,609.68
Collector	32	1.263	1.308	1.28	589,885	755.05
Local	34	1.380	1.435	1.40	690,427	966.60
				Total Urban	7,984,558	12,175.79
Rural Functional Classification						
Interstate	56	2.748	2.806	2.76	693,394	1,913.77
Other P-A	53	1.987	2.042	2.00	593,084	1,186.17
Minor Arterial	41	1.486	1.540	1.50	206,948	310.42
Major Collector	43	1.451	1.497	1.46	586,654	856.51
Minor Collector	44	1.383	1.438	1.40	449,703	629.58
Local	44	1.290	1.343	1.31	560,532	734.30
				Total Rural	3,090,315	5,630.75
	Total Normalized VMT for this Analysis Year=	11,074,873			Total NO_x Emissions (Kilograms per Day)	17,807

Year of Analysis =	2014					
		Emissions Factors with I&M	Emissions Factors without I&M	Composite Emissions Rate	Vehicle Miles of Travel	KG of Emissions per Day
Functional Classification	**Percent of Vehicles Subject to I&M**	71.00%	29.00%			
Urban Functional Classification	**Speed**					
Interstate	41	1.370	1.411	1.38	2,655,761	3664.95
Freeway	47	1.262	1.305	1.27	2,286,408	2,903.74
Other P-A	27	1.165	1.210	1.18	1,869,920	2,206.51
Minor Arterial	31	1.113	1.158	1.13	2,944,900	3,327.74
Collector	32	1.083	1.137	1.10	626,314	688.95
Local	34	1.154	1.200	1.17	791,014	925.49
				Total Urban	11,174,317	13,717.36
Rural Functional Classification	**Speed**					
Interstate	56	1.886	1.944	1.90	866,708	1,646.75
Other P-A	53	1.511	1.566	1.53	767,258	1,173.90
Minor Arterial	41	1.214	1.261	1.23	232,183	285.59
Major Collector	44	1.192	1.246	1.21	748,058	905.15
Minor Collector	44	1.159	1.214	1.17	558,014	652.88
Local	44	1.104	1.157	1.12	706,167	790.91
				Total Rural	3,878,388	5,455.17

Total Normalized VMT for this Analysis Year=	15,052,705		Total NO_x Emissions (Kilograms per Day)	19,172.53

Year of Analysis =	2020					
		Emissions Factors with I&M	Emissions Factors without I&M	Composite Emissions Rate	Vehicle Miles of Travel	KG of Emissions per Day
Functional Classification	**Percent of Vehicles Subject to I&M**	71.00%	29.00%			
Urban Functional Classification	**Speed**					
Interstate	41	1.335	1.385	1.35	2,791,457	3768.47
Freeway	51	1.348	1.400	1.36	2,602,480	3,539.37
Other P-A	26	1.147	1.192	1.16	1,919,415	2,226.52
Minor Arterial	31	1.096	1.149	1.11	3,151,516	3,498.18
Collector	32	1.076	1.122	1.09	658,529	717.80
Local	34	1.134	1.188	1.15	891,359	1,025.06
				Total Urban	12,014,756	14,775.40
Rural Functional Classification	**Speed**					
Interstate	56	1.843	1.901	1.86	942,506	1,753.06
Other P-A	53	1.480	1.543	1.50	841,843	1,262.76
Minor Arterial	41	1.192	1.248	1.21	254,710	308.20
Major Collector	44	1.179	1.226	1.19	864,616	1,028.89
Minor Collector	44	1.149	1.197	1.16	655,549	760.44
Local	44	1.097	1.142	1.11	871,286	967.13
				Total Rural	4,430,510	6,080.48
	Total Normalized VMT for this Analysis Year=	16,445,266			Total NO_x Emissions (Kilograms per Day)	20,855.89

Year of Analysis =	2025					
		Emissions Factors with I&M	Emissions Factors without I&M	Composite Emissions Rate	Vehicle Miles of Travel	KG of Emissions per Day
Functional Classification	**Percent of Vehicles Subject to I&M**	71.00%	29.00%			
Urban Functional Classification	**Speed**					
Interstate	41	1.335	1.385	1.35	2,999,466	4049.28
Freeway	51	1.348	1.400	1.36	2,972,014	4,041.94
Other P-A	25	1.147	1.192	1.16	1,977,887	2,294.35
Minor Arterial	31	1.096	1.149	1.11	3,368,818	3,739.39
Collector	31	1.076	1.122	1.09	695,742	758.36
Local	33	1.134	1.188	1.15	945,713	1,087.57
				Total Urban	12,959,640	15,970.88
Rural Functional Classification	**Speed**					
Interstate	56	1.843	1.901	1.86	1,022,881	1,902.56
Other P-A	53	1.480	1.543	1.50	956,556	1,434.83
Minor Arterial	42	1.192	1.248	1.21	248,954	301.23
Major Collector	44	1.179	1.226	1.19	941,083	1,119.89
Minor Collector	44	1.149	1.197	1.16	722,126	837.67
Local	44	1.097	1.142	1.11	957,534	1,062.86
				Total Rural	4,849,134	6,659.04
	Total Normalized VMT for this Analysis Year=	17,808,774			Total NO_x Emissions (Kilograms per Day)	22,629.93

Volatile Organic Compounds Calculations

Year of Analysis =	1994					
		Emissions Factors with I&M	Emissions Factors without I&M	Composite Emissions Rate	Vehicle Miles of Travel	KG of Emissions per Day
Functional Classification	**Percent of Vehicles Subject to I&M**	71.00%	29.00%			
Urban Functional Classification	**Speed**					
Interstate	41	1.440	1.723	1.52	1,966,481	2989.05
Freeway	46	1.342	1.613	1.42	819,432	1,163.59
Other P-A	27	1.898	2.306	2.02	1,472,640	2,974.73
Minor Arterial	30	1.762	2.149	1.87	2,299,530	4,300.12
Collector	31	1.729	2.112	1.84	528,694	972.80
Local	33	1.683	2.047	1.79	571,974	1,023.83
				Total Urban	7,658,751	13,424.13
Rural Functional Classification	**Speed**					
Interstate	56	1.296	1.521	1.36	529,283	719.82
Other P-A	53	1.312	1.563	1.38	449,987	620.98
Minor Arterial	41	1.484	1.794	1.57	165,685	260.13
Major Collector	44	1.411	1.705	1.50	432,809	649.21
Minor Collector	44	1.415	1.713	1.50	320,121	480.18
Local	44	1.379	1.672	1.46	406,770	593.88
				Total Rural	2,304,655	3,324.21
	Total Normalized VMT for this Analysis Year=	9,963,406			Total VOC Emissions (Kilograms per Day)	16,748

Year of Analysis =	2004					
		Emissions Factors with I&M	Emissions Factors without I&M	Composite Emissions Rate	Vehicle Miles of Travel	KG of Emissions per Day
Functional Classification	**Percent of Vehicles Subject to I&M**	71.00%	29.00%			
Urban Functional Classification	**Speed**					
Interstate	42	1.002	1.249	1.07	2,179,353	2331.91
Freeway	47	0.917	1.158	0.99	148,878	147.39
Other P-A	28	1.290	1.636	1.39	1,682,223	2,338.29
Minor Arterial	31	1.192	1.520	1.29	2,693,792	3,474.99
Collector	32	1.167	1.490	1.26	589,885	743.26
Local	34	1.135	1.448	1.23	690,427	849.23
				Total Urban	7,984,558	9,885.06
Rural Functional Classification						
Interstate	56	0.915	1.112	0.97	693,394	672.59
Other P-A	53	0.909	1.136	0.97	593,084	575.29
Minor Arterial	41	1.018	1.293	1.10	206,948	227.64
Major Collector	43	0.987	1.250	1.06	586,654	621.85
Minor Collector	44	0.966	1.233	1.04	449,703	467.69
Local	44	0.945	1.205	1.02	560,532	571.74
				Total Rural	3,090,315	3,136.81

Total Normalized VMT for this Analysis Year=	11,074,873	Total VOC Emissions (Kilograms per Day)	13,022

Year of Analysis =	2014					
		Emissions Factors with I&M	Emissions Factors without I&M	Composite Emissions Rate	Vehicle Miles of Travel	KG of Emissions per Day
Functional Classification	**Percent of Vehicles Subject to I&M**	71.00%	29.00%			
Urban Functional Classification	**Speed**					
Interstate	41	0.920	1.147	0.99	2,655,761	2629.20
Freeway	47	0.829	1.049	0.89	2,286,408	2,034.90
Other P-A	27	1.194	1.503	1.28	1,869,920	2,393.50
Minor Arterial	31	1.071	1.360	1.15	2,944,900	3,386.64
Collector	32	1.046	1.329	1.13	626,314	707.73
Local	34	1.022	1.295	1.10	791,014	870.12
				Total Urban	11,174,317	12,022.09
Rural Functional Classification	**Speed**					
Interstate	56	0.834	1.019	0.89	866,708	771.37
Other P-A	53	0.820	1.025	0.88	767,258	675.19
Minor Arterial	41	0.915	1.167	0.99	232,183	229.86
Major Collector	44	0.874	1.107	0.94	748,058	703.17
Minor Collector	44	0.872	1.108	0.94	558,014	524.53
Local	44	0.853	1.083	0.92	706,167	649.67
				Total Rural	3,878,388	3,553.80
	Total Normalized VMT for this Analysis Year=	15,052,705			Total Emissions (Kilograms per Day)	15,575.89

Year of Analysis =	2020					
		Emissions Factors with I&M	Emissions Factors without I&M	Composite Emissions Rate	Vehicle Miles of Travel	KG of Emissions per Day
Functional Classification	**Percent of Vehicles Subject to I&M**	71.00%	29.00%			
Urban Functional Classification	**Speed**					
Interstate	41	0.919	1.138	0.98	2,791,457	2735.63
Freeway	51	0.806	1.008	0.86	2,602,480	2,238.13
Other P-A	26	1.216	1.533	1.31	1,919,415	2,514.43
Minor Arterial	31	1.061	1.350	1.14	3,151,516	3,592.73
Collector	32	1.035	1.317	1.12	658,529	737.55
Local	34	1.011	1.284	1.09	891,359	971.58
				Total Urban	12,014,756	12,790.06
Rural Functional Classification	**Speed**					
Interstate	56	0.825	1.010	0.88	942,506	829.41
Other P-A	53	0.819	1.015	0.88	841,843	740.82
Minor Arterial	41	0.914	1.156	0.98	254,710	249.62
Major Collector	44	0.864	1.095	0.93	864,616	804.09
Minor Collector	44	0.862	1.096	0.93	655,549	609.66
Local	44	0.843	1.072	0.91	871,286	792.87
				Total Rural	4,430,510	4,026.47
	Total Normalized VMT for this Analysis Year=	16,445,266			Total Emissions (Kilograms per Day)	16,816.52

Year of Analysis =	2025					
		Emissions Factors with I&M	Emissions Factors without I&M	Composite Emissions Rate	Vehicle Miles of Travel	KG of Emissions per Day
Functional Classification	**Percent of Vehicles Subject to I&M**	71.00%	29.00%			
Urban Functional Classification	**Speed**					
Interstate	41	0.919	1.138	0.98	2,999,466	2939.48
Freeway	51	0.806	1.008	0.86	2,972,014	2,555.93
Other P-A	25	1.216	1.533	1.31	1,977,887	2,591.03
Minor Arterial	31	1.061	1.350	1.14	3,368,818	3,840.45
Collector	31	1.035	1.317	1.12	695,742	779.23
Local	33	1.011	1.284	1.09	945,713	1,030.83
				Total Urban	12,959,640	13,736.95
Rural Functional Classification	**Speed**					
Interstate	56	0.825	1.010	0.88	1,022,881	900.14
Other P-A	53	0.819	1.015	0.88	956,556	841.77
Minor Arterial	42	0.914	1.156	0.98	248,954	243.97
Major Collector	44	0.864	1.095	0.93	941,083	875.21
Minor Collector	44	0.862	1.096	0.93	722,126	671.58
Local	44	0.843	1.072	0.91	957,534	871.36
				Total Rural	4,849,134	4,404.02
	Total Normalized VMT for this Analysis Year=	17,808,774			Total Emissions (Kilograms per Day)	18,140.97

Calculation of Reconciliation Factors

Functional Classification	1994 Universe	1994 Model
Urban Functional Classification		
Interstate	2,098,490	2,315,414
Freeway	936,080	964,832
Other P-A	1,686,360	1,733,946
Minor Arterial	2,010,840	2,707,559
Collector	406,490	622,506
Local	746,460	395,119
Rural Functional Classification		
Interstate	593,400	623,199
Other P-A	485,270	529,833
Minor Arterial	160,430	195,084
Major Collector	464,730	509,607
Minor Collector	142,450	376,923
Local	232,300	280,996

Totals

	SIP VMT	Population Adjusted SIP VMT	Model VMT
Non-Local	8,984,540	8,984,540	10,578,903
Local	978,760	978,760	676,115

VMT Adjustment Factors	
Non-Local	0.8493
Local	1.4476

Off Model Emission Reduction Calculations

2004 Incident Management – Greensboro

	VOC (kg/day)	NOx (kg/day)
I-2402 (A,B, & C) -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	3,773.38	8,482.01
COA Emissions due to non-recurring congest., Ec =	184.90	415.62
Daily reductions, Ed =	7.77	17.47
I-2201 E & all of I-40 -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	3,773.38	8,482.01
COA Emissions due to non-recurring congest., Ec =	184.90	415.62
Daily reductions, Ed =	54.25	121.96
R-2413 C -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,482.11	3,592.39
Other Principle Emissions due to non-recurring congest., Ec =	121.62	176.03
Daily reductions, Ed =	0.81	1.17
R-0984 A&B -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,482.11	3,592.39
Other Principle Emissions due to non-recurring congest., Ec =	121.62	176.03
Daily reductions, Ed =	5.76	8.34
High Point Road -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,482.11	3,592.39
Other Principle Emissions due to non-recurring congest., Ec =	121.62	176.03
Daily reductions, Ed =	1.09	1.57
Total Reductions	**69.69**	**150.51**

2014 Incident Management – Greensboro

	VOC (kg/day)	NOx (kg/day)
R-2309 A & B -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	3,415.46	4,209.72
Other Principle Emissions due to non-recurring congest., Ec =	167.36	206.28
Daily reductions, Ed =	7.49	9.23
U-2524 -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	4,549.50	8,287.31
COA Emissions due to non-recurring congest., Ec =	222.93	406.08
Daily reductions, Ed =	8.99	16.38
U-2525 B -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	4,549.50	8,287.31
COA Emissions due to non-recurring congest., Ec =	222.93	406.08
Daily reductions, Ed =	1.91	3.48
U-2581 B -- Surveillance & Incident Detection and Response		
Reg. Collector Emissions, Eb =	1,142.57	1,570.51
Collector Emissions due to non-recurring congest., Ec =	55.99	76.96
Daily reductions, Ed =	2.89	3.98

	VOC	NOx
I-2402 (A,B, & C) -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	4,549.50	8,287.31
COA Emissions due to non-recurring congest., Ec =	222.93	406.08
Daily reductions, Ed =	9.87	17.98
I-2201 E & all of I-40 -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	4,549.50	8,287.31
COA Emissions due to non-recurring congest., Ec =	222.93	406.08
Daily reductions, Ed =	54.38	99.07

R-2413 C -- Surveillance & Incident Detection and Response

Reg. Other Principle Emissions, Eb =	3,415.46	4,209.72
Other Principle Emissions due to non-recurring congest., Ec =	167.36	206.28
Daily reductions, Ed =	0.66	0.82

R-0984 A&B -- Surveillance & Incident Detection and Response

Reg. Other Principle Emissions, Eb =	3,415.46	4,209.72
Other Principle Emissions due to non-recurring congest., Ec =	167.36	206.28
Daily reductions, Ed =	13.57	16.73

High Point Road -- Surveillance & Incident Detection and Response

Reg. Other Principle Emissions, Eb =	3,415.46	4,209.72
Other Principle Emissions due to non-recurring congest., Ec =	167.36	206.28
Daily reductions, Ed =	2.09	2.58

US 421 -- Surveillance & Incident Detection and Response

Reg. Other Principle Emissions, Eb =	3,415.46	4,209.72
Other Principle Emissions due to non-recurring congest., Ec =	167.36	206.28
Daily reductions, Ed =	5.93	7.31

US 220 (I-73) -- Surveillance & Incident Detection and Response

Reg. COA Emissions, Eb =	4,549.50	8,287.31
COA Emissions due to non-recurring congest., Ec =	222.93	406.08
Daily reductions, Ed =	14.72	26.82

Total Reductions	**122.52**	**204.36**

2020 Incident Management -- Greensboro

	VOC (kg/day)	NOx (kg/day)
U-2525 C -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	6,029.67	3,691.55
COA Emissions due to non-recurring congest., Ec =	295.45	180.89
Daily reductions, Ed =	3.44	0.74

	VOC (kg/day)	NOx (kg/day)
R-2309 A & B -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,711.49	5,767.14
Other Principle Emissions due to non-recurring congest., Ec =	132.86	282.59
Daily reductions, Ed =	4.77	10.16
U-2524 -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	6,029.67	3,691.55
COA Emissions due to non-recurring congest., Ec =	295.45	180.89
Daily reductions, Ed =	36.47	22.33
U-2525 B -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	6,029.67	3,691.55
COA Emissions due to non-recurring congest., Ec =	295.45	180.89
Daily reductions, Ed =	6.08	3.72
U-2581 B -- Surveillance & Incident Detection and Response		
Reg. Collector Emissions, Eb =	1,269.83	3,736.97
Collector Emissions due to non-recurring congest., Ec =	62.22	183.11
Daily reductions, Ed =	1.40	4.12

	VOC (kg/day)	NOx (kg/day)
I-2402 (A,B, & C) -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	6,029.67	3,691.55
COA Emissions due to non-recurring congest., Ec =	295.45	180.89
Daily reductions, Ed =	30.18	18.48
I-2201 E & all of I-40 -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	6,029.67	3,691.55
COA Emissions due to non-recurring congest., Ec =	295.45	180.89
Daily reductions, Ed =	160.45	98.23
R-2413 C -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,711.49	5,767.14
Other Principle Emissions due to non-recurring congest., Ec =	132.86	282.59
Daily reductions, Ed =	1.31	2.79
R-0984 A&B -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,711.49	5,767.14
Other Principle Emissions due to non-recurring congest., Ec =	132.86	282.59
Daily reductions, Ed =	9.89	21.04
High Point Road -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,711.49	5,767.14
Other Principle Emissions due to non-recurring congest., Ec =	132.86	282.59
Daily reductions, Ed =	1.62	3.45
US 421 -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,711.49	5,767.14
Other Principle Emissions due to non-recurring congest., Ec =	132.86	282.59
Daily reductions, Ed =	4.36	9.28

US 220 (I-73) -- Surveillance & Incident Detection and Response

Reg. COA Emissions, Eb =	6,029.67	3,691.55
COA Emissions due to non-recurring congest., Ec =	295.45	180.89
Daily reductions, Ed =	49.76	30.46
Total Reductions	**309.73**	**224.79**

2025 Incident Management -- Greensboro

	VOC (kg/day)	NOx (kg/day)
U-2525 C -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	5,341.22	4,183.36
COA Emissions due to non-recurring congest., Ec =	261.72	204.98
Daily reductions, Ed =	4.50	3.53

	VOC (kg/day)	NOx (kg/day)
R-2309 A & B -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,840.25	4,281.35
Other Principle Emissions due to non-recurring congest., Ec =	139.17	209.79
Daily reductions, Ed =	6.31	9.51
U-2524 -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	5,341.22	4,183.36
COA Emissions due to non-recurring congest., Ec =	261.72	204.98
Daily reductions, Ed =	29.77	23.32
U-2525 B -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	5,341.22	4,183.36
COA Emissions due to non-recurring congest., Ec =	261.72	204.98
Daily reductions, Ed =	4.91	3.84
U-2581 B -- Surveillance & Incident Detection and Response		
Reg. Collector Emissions, Eb =	1,357.29	3,658.87
Collector Emissions due to non-recurring congest., Ec =	66.51	179.28
Daily reductions, Ed =	1.56	4.22

	VOC (kg/day)	NOx (kg/day)
I-2402 (A,B, & C) -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	5,341.22	4,183.36
COA Emissions due to non-recurring congest., Ec =	261.72	204.98
Daily reductions, Ed =	24.83	19.45
I-2201 E & all of I-40 -- Surveillance & Incident Detection and Response		
Reg. COA Emissions, Eb =	5,341.22	4,183.36
COA Emissions due to non-recurring congest., Ec =	261.72	204.98
Daily reductions, Ed =	131.12	102.70
R-2413 C -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,840.25	4,281.35
Other Principle Emissions due to non-recurring congest., Ec =	139.17	209.79
Daily reductions, Ed =	1.35	2.03
R-0984 A&B -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,840.25	4,281.35
Other Principle Emissions due to non-recurring congest., Ec =	139.17	209.79
Daily reductions, Ed =	12.90	19.44
High Point Road -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,840.25	4,281.35
Other Principle Emissions due to non-recurring congest., Ec =	139.17	209.79
Daily reductions, Ed =	2.25	3.40
US 421 -- Surveillance & Incident Detection and Response		
Reg. Other Principle Emissions, Eb =	2,840.25	4,281.35
Other Principle Emissions due to non-recurring congest., Ec =	139.17	209.79
Daily reductions, Ed =	5.69	8.57

US 220 (I-73) -- Surveillance & Incident Detection and Response

Reg. COA Emissions, Eb =	5,341.22	4,183.36
COA Emissions due to non-recurring congest., Ec =	261.72	204.98
Daily reductions, Ed =	38.89	30.46
Total Reductions	**264.09**	**230.46**

Transit Improvements -- Greensboro

1994

Avg. Ridership After =	12,900.00
Avg. Ridership Before =	0.00
Avg. Veh. Occup. =	1.35
Avg. Trip Length =	9.38
VMT Reduction =	89,631.11

	VOC (kg/day)	NOx (kg/day)
Emission Factor =	1.55	2.20
Daily Emission Reduction (kg/day) =	**139.02**	**196.92**

2004

Avg. Ridership After =	14,600.00
Avg. Ridership Before =	0.00
Avg. Veh. Occup. =	1.35
Avg. Trip Length =	9.67
VMT Reduction =	104,579.26

	VOC (kg/day)	NOx (kg/day)
Emission Factor =	1.11	1.49
Daily Emission Reduction (kg/day) =	**116.19**	**155.93**

2014

Avg. Ridership After =	16,300.00
Avg. Ridership Before =	0.00
Avg. Veh. Occup. =	1.35
Avg. Trip Length =	9.87
VMT Reduction =	119,171.11

	VOC (kg/day)	NOx (kg/day)
Emission Factor =	1.00	1.20
Daily Emission Reduction (kg/day) =	**119.53**	**142.65**

2020

Avg. Ridership After =	17,700.00
Avg. Ridership Before =	0.00
Avg. Veh. Occup. =	1.35
Avg. Trip Length =	9.98
VMT Reduction =	130,848.89

	VOC (kg/day)	NOx (kg/day)
Emission Factor =	0.99	1.17
Daily Emission Reduction (kg/day) =	**130.06**	**153.62**

2025

Avg. Ridership After =	19,500.00	
Avg. Ridership Before =	0.00	
Avg. Veh. Occup. =	1.35	
Avg. Trip Length =	10.07	
VMT Reduction =	145,455.56	
	VOC (kg/day)	**NOx (kg/day)**
Emission Factor =	0.99	1.17
Daily Emission Reduction (kg/day) =	**144.58**	**170.76**

Transit Improvements -- High Point

1994

Avg. Ridership After =	3,600.00	
Avg. Ridership Before =	0	
Avg. Veh. Occup. =	1.35	
Avg. Trip Length =	9.38	
VMT Reduction =	25,013.33	
	VOC (kg/day)	**NOx (kg/day)**
Emission Factor =	1.55	2.2
Daily Emission Reduction (kg/day) =	**38.80**	**54.95**

2004

Avg. Ridership After =	6,600.00	
Avg. Ridership Before =	0	
Avg. Veh. Occup. =	1.35	
Avg. Trip Length =	9.67	
VMT Reduction =	47,275.56	
	VOC (kg/day)	**NOx (kg/day)**
Emission Factor =	1.11	1.49
Daily Emission Reduction (kg/day) =	**52.52**	**70.49**

2014

Avg. Ridership After =	10,000.00	
Avg. Ridership Before =	0	
Avg. Veh. Occup. =	1.35	
Avg. Trip Length =	9.87	
VMT Reduction =	73,111.11	
	VOC (kg/day)	**NOx (kg/day)**
Emission Factor =	1	1.2
Daily Emission Reduction (kg/day) =	**73.33**	**87.51**

2020

Avg. Ridership After =	12,700.00	
Avg. Ridership Before =	0	
Avg. Veh. Occup. =	1.35	
Avg. Trip Length =	9.98	
VMT Reduction =	93,885.93	
	VOC (kg/day)	**NOx (kg/day)**
Emission Factor =	0.99	1.17
Daily Emission Reduction (kg/day) =	**93.32**	**110.22**

2025

Avg. Ridership After =	16,000.00	
Avg. Ridership Before =	0	
Avg. Veh. Occup. =	1.35	
Avg. Trip Length =	10.07	
VMT Reduction =	119,348.15	
	VOC (kg/day)	**NOx (kg/day)**
Emission Factor =	0.99	1.17
Daily Emission Reduction (kg/day) =	**118.63**	**140.11**

Multi-Modal Center -- Greensboro

2004

Historical P&R Lot Usage =	0.9	
Parking Spaces in Lot =	800	
Avg. Driving Dist. =	5.58	
Autos Removed =	720	
# of Bus Increase =	3	
	VOC (kg/day)	**NOx (kg/day)**
Pk. Hr. Emission Rate (Autos) =	0.768	2.748
Auto Emission Reduction =	6,174.14	22,091.86
Pk. Hr. Emission Rate (Buses) =	1.45	6.84
Bus Emission Increase =	48.57	229.12
Daily Emission Reduction =	**6.13**	**21.86**

2014

Historical P&R Lot Usage =	0.9	
Parking Spaces in Lot =	1600	
Avg. Driving Dist. =	5.77	
Autos Removed =	1440	
# of Bus Increase =	5	
	VOC (kg/day)	**NOx (kg/day)**
Pk. Hr. Emission Rate (Autos) =	0.711	1.994
Auto Emission Reduction =	11,819.83	33,148.73
Pk. Hr. Emission Rate (Buses) =	1.44	3.51
Bus Emission Increase =	83.12	202.61
Daily Emission Reduction =	**11.74**	**32.95**

2020

Historical P&R Lot Usage =	0.9	
Parking Spaces in Lot =	2000	
Avg. Driving Dist. =	5.94	
Autos Removed =	1800	
# of Bus Increase =	8	
	VOC (kg/day)	**NOx (kg/day)**
Pk. Hr. Emission Rate (Autos) =	0.686	1.843
Auto Emission Reduction =	14,681.16	39,442.25
Pk. Hr. Emission Rate (Buses) =	1.44	3.32
Bus Emission Increase =	136.97	315.79
Daily Emission Reduction =	**14.54**	**39.13**

2025

Historical P&R Lot Usage =	0.9
Parking Spaces in Lot =	2000
Avg. Driving Dist. =	5.93
Autos Removed =	1800
# of Bus Increase =	10

	VOC (kg/day)	NOx (kg/day)
Pk. Hr. Emission Rate (Autos) =	0.686	1.843
Auto Emission Reduction =	14,647.77	39,352.52
Pk. Hr. Emission Rate (Buses) =	1.44	3.32
Bus Emission Increase =	170.82	393.83
Daily Emission Reduction =	**14.48**	**38.96**

Vanpool Programs -- Greensboro

2004

# Vans =	20	
# Riders/Van =	15	
Work Veh. Occup. =	1.35	
Veh. Removed =	222.22	
Avg. Commute Length =	9.97	
	VOC (kg/day)	**NOx (kg/day)**
Pk. Hr. Speed Emission Rate =	0.889	1.907
Daily Emission Reduction =	**3.94**	**8.45**

2014

# Vans =	20	
# Riders/Van =	15	
Work Veh. Occup. =	1.35	
Veh. Removed =	222.22	
Avg. Commute Length =	10.05	
	VOC (kg/day)	**NOx (kg/day)**
Pk. Hr. Speed Emission Rate =	0.809	1.502
Daily Emission Reduction =	**3.61**	**6.71**

2020

# Vans =	20	
# Riders/Van =	15	
Work Veh. Occup. =	1.35	
Veh. Removed =	222.22	
Avg. Commute Length =	10.12	
	VOC (kg/day)	**NOx (kg/day)**
Pk. Hr. Speed Emission Rate =	0.799	1.475
Daily Emission Reduction =	**3.59**	**6.63**

2025

# Vans =	20	
# Riders/Van =	15	
Work Veh. Occup. =	1.35	
Veh. Removed =	222.22	
Avg. Commute Length =	10.19	
	VOC (kg/day)	**NOx (kg/day)**
Pk. Hr. Speed Emission Rate =	0.799	1.475
Daily Emission Reduction =	**3.62**	**6.68**

Appendix G: Agency Comments of the Draft Report

NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

ALAN W. KLIMEK, P.E.
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF AIR QUALITY

June 4, 1998

Marion R. Poole, Ph.D., P.E.
NC Department of Transportation
Division of Highways
Manager, Statewide Planning Branch
Post Office Box 25201
Raleigh, North Carolina 27611-5201

Dear Dr. Poole:

Thank you for forwarding drafts of the Post Redesignation Conformity Analysis Report and Conformity Determination for the Greensboro Urban Area 2025 Long Range Transportation Plan and also the Post Redesignation Conformity Analysis Report and Conformity Determination for the High Point Urban Area 2025 Long Range Transportation Plan. The North Carolina Department of Environment and Natural Resources, Division of Air Quality has completed its review of the report and analysis.

The emissions analysis contained in each of the above reports is identical since both areas are included as part of the Triad regional model. The report shows how the budgets were combined for the appropriate counties, and how the total emissions for the Greensboro and High Point portions of the regional model are below those budgets established in the State Implementation Plan. The budget comparison was complete for each of the appropriate analysis and milestone years.

The report is very comprehensive and adequately addresses the details of the analysis. The Division of Air Quality therefore believes this report contains the appropriate air quality information to support conformity determinations for both the Greensboro and High Point 2025 Long Range Transportation Plans.

In performing our agency review, DAQ did note some corrections or additions that should be made for the final report. These comments are included as an enclosure.

Thank you again for the opportunity to review this report. If you have any questions, you may call me or contact Deidre Hinkle of my staff at 715-7221.

Sincerely,

Alan W. Klimek, P.E.

P.O. BOX 29580, RALEIGH NC 27626-0580 / 2728 CAPITAL BLVD., RALEIGH NC 27604
PHONE 919-715-6232 FAX 919-715-7175 WWW. EHNR.STATE.NC.US/EHNR/

/dlh

Enclosure

cc: Lee Daniel, DAQ
Donnie Redmond, DAQ
Deidre Hinkle, P.E., DAQ
Brock Nicholson, P.E., DAQ
Sheila Holman, DAQ
David Hyder, P.E., NCDOT
Jamal Alavi, P.E., NCDOT
Anna Brigman, P.E., NCDOT
Kelly Sheckler, EPA
Wendy Gasteiger, A.I.C.P., FHWA
Susan Schruth, FTA

Comments on the Conformity Analysis Reports for the Greensboro and High Point Urban Areas' 2025 Long Range Transportation Plans

- The Table of Contents and Cross Reference Index are missing from the report.

- In the Executive Summary and Section 2 of the report you mention the date that Guilford County was originally designated as nonattainment. Please note the date is January 6, 1992. Davidson County was also designated on this date.

- In Table 2 of the Executive Summary, the 1994 NOx SIP emissions should be 39,715 kg/day. Also, the 2025 NOx and VOC values for the LRP do not match Table 7 and Table 8 in the report. The values in Table 7 and Table 8 appear to be correct. Please also verify the 1994 NOx value for the LRP.

- The conversion to kg/day in Tables 2 and 3 of the report are probably not necessary.

- In Section 4.3 of the report, the VMT factor for non-local streets is listed as 1.4476. This value looks correct, but does not match the value calculated in Appendix F of the report.

- In Table 7, two numbers have been transposed in the 2004 and later SIP emissions. These values should be 39,798 kg/day.

- In Section 4.6 of the report, the date USEPA approved the SIP redesignation package for Greensboro/High Point/Winston-Salem was November 8, 1993.

- In the Calculation of Reconciliation Factors in Appendix F, references to 1990 and Population Adjustment should be removed. Also, please recalculate the HPMS (Universe File) sum for Urban Minor Arterials and Urban Local Streets. Finally, if the adjustment factor for Local Streets should be 1.4476, then all the emission calculation sheets will change and also the tables in the report.

- The Off Model Emission Reduction Calculations in Appendix F do not list any units. They look to be kg/day.

- The last page of Appendix F is very important and should be moved to the first page of the Appendix. Also, this table should include columns to summarize the calculations for the total LRP emissions. Columns should be added for the emissions from the network, emissions reduced by off-model projects, emissions reduced by transit improvements, and emissions reduced by the multi-modal center. The final column labeled "comparison amount" should match the values compared to the SIP in Table 2, Table 7 and Table 8 of the report. Currently, they do not.

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF AIR QUALITY

JAMES B. HUNT JR.
GOVERNOR

July 21, 1999

Marion R. Poole, Ph.D., P.E.
NC Department of Transportation
Division of Highways
Manager, Statewide Planning Branch
Post Office Box 25201
Raleigh, North Carolina 27611-5201

Dear Dr. Poole:

Thank you for forwarding the draft of the Post Redesignation Conformity Analysis Report and Conformity Determination for the Greensboro Urban Area 2025 Long Range Transportation Plan. The North Carolina Department of Environment and Natural Resources, Division of Air Quality has completed its review of the report and analysis.

The analysis that is provided in this report demonstrates that the emissions from the transportation plan are less than the emissions budgets as described in the current State Implementation Plan (SIP). The budget comparison was complete for each of the appropriate analysis and milestone years. The report is very comprehensive and adequately addresses the details of the analysis. The Division of Air Quality therefore believes this report contains the appropriate air quality information to support a conformity determination.

Thank you again for the opportunity to review this report. If you have any questions, you may call me or contact Deidre Hinkle of my staff at 715-7221.

Sincerely,

Alan W. Klimek, P.E.

/dlh

cc: Lee Daniel, DAQ
Donnie Redmond, DAQ
Deidre Hinkle, P.E., DAQ
Sheila Holman, DAQ
David Hyder, P.E., DOT
Kelly Sheckler, EPA
Kay Batey, FHWA
Myra Immings, FTA

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Appendix H: Public Participation Policy

PUBLIC INVOLVEMENT PROCESS FOR REVIEW AND APPROVAL OF THE GREENSBORO URBAN AREA LONG RANGE TRANSPORTATION PLAN

The Greensboro Urban Area Transportation Advisory Committee (TAC) has approved a public involvement process for the area's Long Range Transportation Plan (LRTP). This process addresses specific requirements related to Section 1024, *Metropolitan Planning*, of the Intermodal Surface Transpiration Efficiency Act of 1991 (ISTEA).

PART A: SUMMARY OF PURPOSE

Under the requirements of ISTEA, it is the responsibility of each MPO, through its Technical Coordinating Committee (TCC) and Transportation Advisory Committee (TAC), to ensure that the public has been adequately informed and involved in the metropolitan transportation planning process. In the case of a significant revision or update to the LRTP, the TCC shall recommend a specific Public Involvement Plan (PIP) appropriate for the particular action being considered. Developing, approving, and implementing the PIP will be among the earliest tasks completed in an LRTP revision or update. The PIP should include provisions enabling the TAC to monitor the progress of the process as it develops.

Each PIP shall describe and schedule suitable efforts designed to inform, educate, build consensus, and facilitate a collaborative decision-making process. The PIP will be designed to provide timely information to potentially affected parties (public officials, citizens, other agencies, etc.) early in the process, and at critical decision points along the way. Potentially critical steps in developing the LRTP include:

- Defining community goals and objectives
- Proposing strategies and policies
- Reviewing assumptions and projections
- Identifying deficiencies
- Establishing evaluation criteria
- Generating solutions
- Evaluating alternatives
- Recommending and prioritizing specific projects
- Approving final plan

Special efforts will be made to contact and consider the needs of groups traditionally underserved by transportation systems and underrepresented in the planning process, including but not limited to the elderly, the disabled, and low-income or minority households. A variety of techniques will be used to achieve the goals of the public involvement process as effectively as possible. Potential techniques may include:

- Charettes
- Interviews
- Polls and surveys
- Commercial radio and television
- Newsletters/mailing lists
- Workshops
- Task forces
- Written comments
- Transportation fairs
- Focus groups
- Newspaper inserts/articles
- Public access television
- Hotlines
- Community/neighborhood meetings
- Steering/advisory committees
- Public hearings

Initial TAC approval of the PIP shall be required, and the TAC may at any time require such revisions to the PIP as are needed to maintain a full and open process. Adequate public notice shall be given concerning any revision to the PIP. The approved PIP will be documented and made available to the public, and will be included directly or by reference into the final LRTP report/document, along with a summary of significant comments and responses. Final review and approval of comments on the LRTP by the TAC (as described in *Part B*) explicitly denotes acceptance of the entire public involvement process for that particular LRTP action.

PART B: ESSENTIAL ELEMENTS

The type and degree of public involvement required to provide effective community input and review for the Long Range Transportation Plan varies according to the action being taken. It is impossible to pre-define a collaborative decision-making process that can successfully respond over the entire range of issues and uncertainties that arise in the course of such a dynamic, continuously-evolving undertaking. Therefore, the specific public involvement process described below is intended to serve only as the final administrative step in a potentially much larger process. It should be considered the minimum acceptable level of public involvement, suitable on its own only in the case of administrative actions that do not involve actual revisions to the LRTP. The essential elements of the public involvement process for the Greensboro Urban Area's Long Range Transportation Plan are:

- The Greensboro Urban Area Metropolitan Planning Organization (MPO) shall prepare a *draft* Long Range Transportation Plan (LRTP) that meets all requirements of the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the North Carolina Department of Transportation (NCDOT).

- The City of Greensboro Department of Transportation (GDOT) is the lead planning agency for the MPO. The components of the LRTP shall be on file with GDOT.

- The Greensboro MPO's Technical Coordinating Committee (TCC) and Transportation Advisory Committee (TAC) shall review and comment on the draft LRTP document prior to granting tentative approval. The tentative approval shall be subject to public comments forwarded to the TCC and the TAC during the public review period.

- Copies of the draft LRTP will be made available to the public in the City Clerk's office, the County Commissioners' office, and the GDOT office. The public review period shall be thirty (30) days. A notice will be placed in the major newspapers for seven consecutive days at the beginning of the thirty day comment period preceding review and action by the TCC and TAC. The notice will include a due date for comments, locations of draft LRTP's, and a contact person with address and telephone number. All comments should be in writing. A public meeting at the end of the thirty day period is at the option of the TAC. The notice for a public meeting should be placed for three (3) consecutive days at least one (1) week prior to the meeting, and will include a date, location, and contact person.

- At least one Greensboro MPO staff person shall be designated to answer questions from persons or groups concerning the LRTP.

- Relevant information will be provided in a timely manner to any citizens, public agencies, private providers of transportation services, or other parties or segments of the community identified as being significantly affected by the proposed actions.

- Public comments shall be assembled and presented to the Greensboro Urban Area TCC and TAC. Response to the public comments shall be prepared at the discretion of the TAC.

- When significant written or oral comments are received on the draft LRTP, the Greensboro MPO shall prepare a report summarizing the public comments and their analysis and disposition. This report shall be submitted along with the final LRTP document to FHWA, FTA and NCDOT, and made available to other parties upon request.

- After reviewing public comments, the TCC and TAC shall meet to consider approval of the final LRTP document.

- If the final LRTP or action differs from what was made available for public comment to a degree that raises new and unforeseen material issues, additional opportunity for public comment will be provided.

- The Greensboro MPO's public involvement process will be coordinated with NCDOT's statewide and project-specific public involvement plans whenever possible to enhance public consideration and reduce costs, redundancies, and confusion.

- This Public Involvement Process will be evaluated periodically to determine its effectiveness, and revised as necessary to provide full and open access. Any revision to the PIP will require a forty-five (45) day public review and comment period.

CITY OF GREENSBORO

NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION
P.O. BOX 3136
GREENSBORO, NC 27402-3136
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Greensboro Urban Area Public Review Policy for the Local Transportation Improvement Program

1. The Greensboro Urban Area shall prepare and publish a Local Transportation Improvement Program which meet all requirements of FHWA, FTA and NCDOT. The components of a LTIP shall be on file in the City of Greensboro Department of Transportation. The LTIP shall be developed based on information available from the NCDOT draft STIP and a supplemental document prepared by NCDOT.

2. The Greensboro Urban Area Technical Coordinating Committee and Transportation Advisory Committee shall review the document and comment until a tentative approval can be given. The tentative approval shall be subject to public comments forwarded to the TCC and TAC during the public review period.

3. Copies of the draft LTIP will be made available to the public at the City Clerk's Office, County Commissioners Office, GDOT Office, NCDOT Office, NC A&TSU Library, UNCG Library and all Greensboro Libraries. The public review period shall be for a period of 30 days. A Public Notice will be placed in the major newspapers for seven consecutive days at the beginning of the 30 day comment period preceding approval by the TCC and TAC. The notice will include a due date for comment, location of draft LTIP, contact person, address and phone number. All comments should be in writing. A public hearing at the end of the 30 day period is at the option of the TAC chairman. The notice for a public hearing should be placed for 3 consecutive days and will include a date, location, and contact person for public hearing participants to contact.

4. A Greensboro MPO staff person shall remain available to answer any questions to any person or group interested in the LTIP.

5. The public comments shall be assembled and presented to the Greensboro Urban Area TCC and TAC. Response to the public comments shall be prepared as requested.

6. Once the Greensboro Urban Area has received all public comments, the TCC and TAC shall meet to approve the final LTIP document.

7. When significant written and oral comments are received on the draft LTIP, the Greensboro Urban Area MPO (required for non-attainment areas) shall prepare a summary, analysis and report on the disposition of the public comments, and such summary, analysis and report shall be submitted along with the final LTIP document to FHWA, FTA and NCDOT, and made available to other parties upon request.

Appendix I: Comments on the Conformity Determination by Citizens

Appendix J: Resolution Showing Adoption of Greensboro Urban Area Long Range Transportation Plan

Resolution Passed by the
Transportation Advisory Committee of the
City of Greensboro, North Carolina

The following resolution was offered by _____, seconded by _____ and, upon being put to a vote, was carried _____ on the ____ day of _____, 1998.

WHEREAS, the Greensboro City Council, Guilford County Commissioners, North Carolina Department of Transportation Statewide Planning Branch and the North Carolina Board of Transportation are actively involved in transportation planning for the Greater Greensboro Urban Area; and

WHEREAS, the municipality and the Department of Transportation are directed by North Carolina General Statutes 136-66.2 to reach agreement for a street system that will serve present and anticipated volumes of vehicular traffic in and around the Municipality; and

WHEREAS, the Greensboro Urban Area has an existing thoroughfare plan dated _____ and the North Carolina General Statutes 136-66.2(d) provide for the revision of this plan; and

WHEREAS, the Transportation Advisory Committee is the duly recognized transportation decision making body for the 3-C transportation planning process in the Greensboro Urban Area Metropolitan Planning Organization required by 23 CFR Part 134; and

WHEREAS, the Technical Coordinating Committee and the Transportation Advisory Committee for the urban area have prepared a revised long-range transportation plan for the urban area; and

WHEREAS, it is recognized that the proper movement of traffic within and through the Greater Greensboro Area is a highly desirable element of the comprehensive plan for the orderly growth and development of the urban area; and

WHEREAS, after full study of the revised Plan, the Transportation Advisory Committee of the City of Greensboro feels it to be in the best interests of the City to adopt the said plan and recommend its adoption to the North Carolina Department of Transportation;

WHEREAS, the Greensboro Long Range Plan has at least a 20 year horizon and is fiscally constrained as required by 23 CFR Part 450.322;

NOW THEREFORE, BE IT RESOLVED: That the Greater Greensboro Urban Area Transportation Plan as shown on a map dated _____ and prepared by the Technical Coordinating Committee, the Transportation Advisory Committee, and the Statewide Planning Branch, North Carolina Department of Transportation, be approved and adopted as a guide in the development of the street and highway system in the Greater Greensboro Urban Area and the same is hereby recommended to the North Carolina Department of Transportation for its subsequent adoption:

_____

Chairperson
Transportation Advisory Committee

I do hereby certify that the above is a true and correct copy of excerpts from the minutes of the Transportation Advisory Committee meeting of the said City. Witness my had and the official seal of the Transportation Advisory Committee this the __ day of _____, 1998.

_____

Notary Public

Appendix K: Greensboro Urban Area Resolution Finding the Transportation Plan in Conformity with the SIP